FLIGHT

MAGAZINE

JULY 1955
35 cents

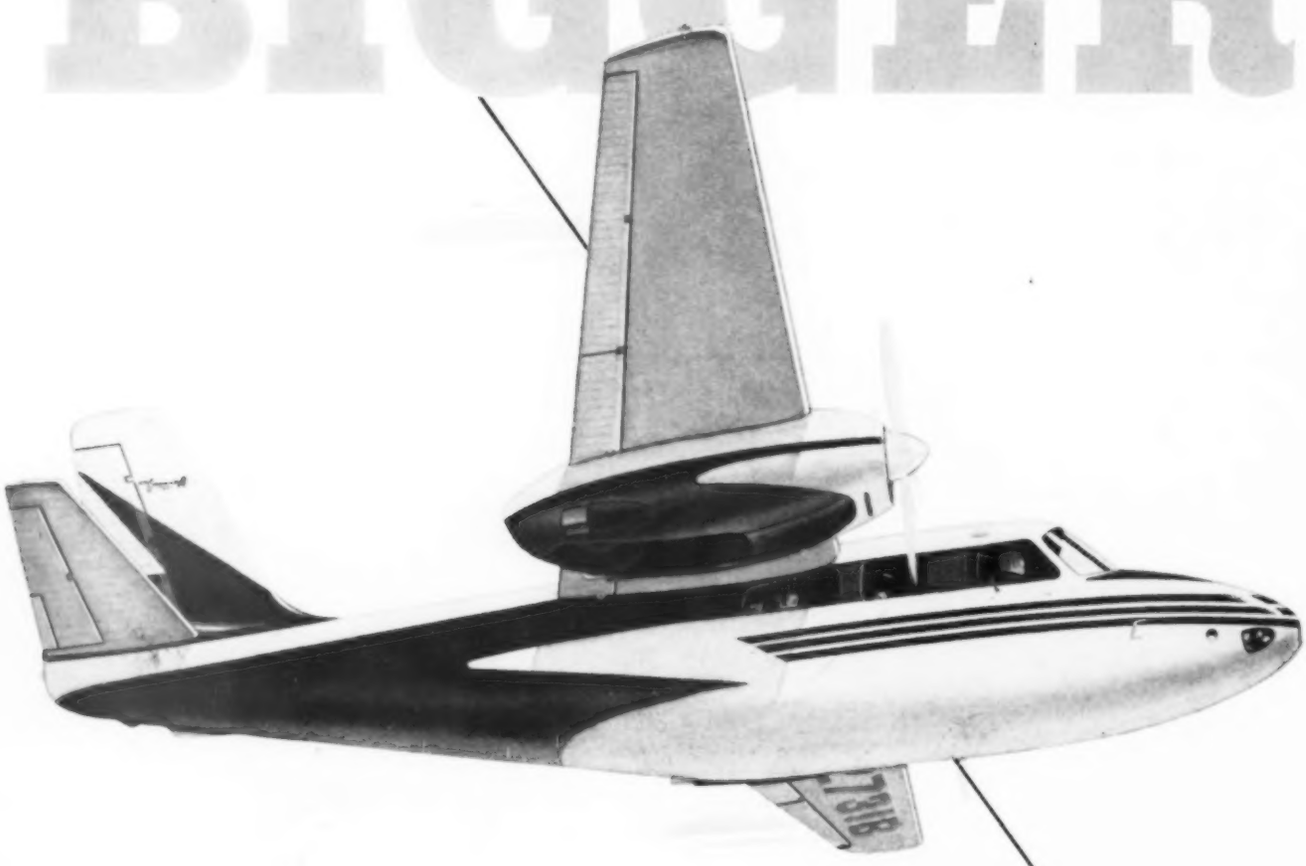
TECHNOLOGY DEPT.

#1

PUBLIC LIBRARY
JUL 19 1955
DETROIT

MOONEY MITE

Announcing the new BIGGER



AERO Commander 560 A

LONGER
ROOMIER
MORE COMFORTABLE

For complete information contact your
Aero Commander Distributor or write for Catalog 121

AERO DESIGN AND ENGINEERING COMPANY • TULAKES AIRPORT • P. O. BOX 118 • BETHANY, OKLAHOMA

Unless
you're built
like this
you
need a

LEAR AUTOPILOT

Such as the Lear F-5 and MB-2 autopilots for jets... the L-10 autopilot for supersonic planes... the L-5 autopilot for airliners and large executive planes... the L-2 autopilot for light executive planes. Other Lear automatic flight control systems: YAW DAMPERS for jets... ARCON automatic rudder control for executive planes.

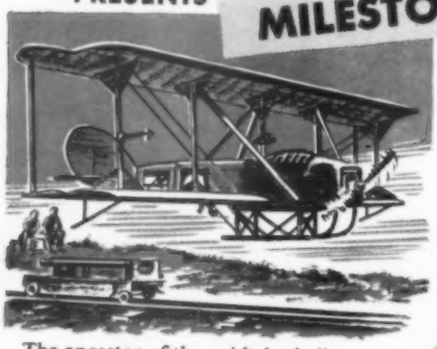
LEAR INCORPORATED, 3171 South Bundy Drive, Santa Monica, California

Lear *25 YEARS OF SERVICE TO AVIATION*

IP-8

Phillips 66
PRESENTS

MILESTONES IN AVIATION



The ancestor of the guided missile was the aerial torpedo developed by the U. S. Navy and Sperry in 1916-1918.

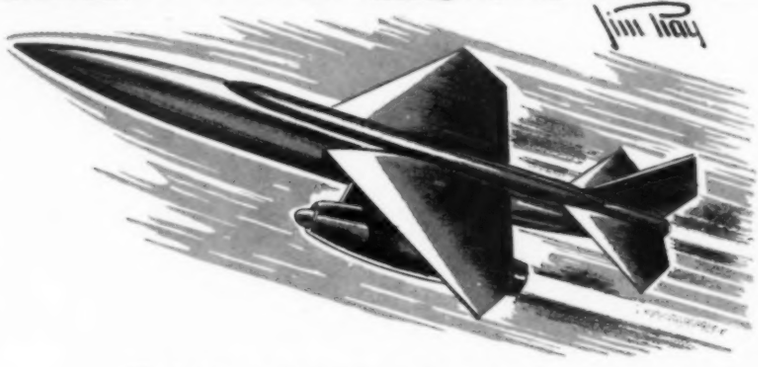
Empty Cockpits

The amazing progress of science, electronics, radio and radar has brought us a new breed of aircraft called "Drones"—full-sized jet bombers and big four-engined bombers, flying at sonic speeds with *empty cockpits*.

Without a single human being aboard, these planes can take off, fly, perform intricate maneuvers, and land. But every move of these super-robot aircraft is controlled by human brains and hands, from the ground or from a "director" plane—either nearby or surprisingly far away.

So here is another milestone in aviation—*guided missiles*.

The U. S. Navy *Regulus* surface-to-surface guided missile.



The *Bomarc IM-99* long range pilotless interceptor missile.

It's Performance that Counts!

Phillips Petroleum Company's performance in the field of aviation is evidenced by the many important discoveries that come from its laboratories—discoveries resulting in the production of high octane gasoline on a truly enormous scale.

Today Phillips is making vast quantities of 115/145 grade aviation gasoline for military and commercial use, and is also producing improved fuels for the latest designs in turbo-props and jets.

AVIATION DIVISION
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

Phillips 66
Pilots Guide Free
at your Airport Dealers'

Used along with a handy Phillips 66 Credit Card, this directory of Phillips 66 Airport Dealers will be helpful to pilots.

Phillips 66

AVIATION PRODUCTS

AIR Report

Significant Trends and News

CESSNA CH-1 HELICOPTER received CAA type certificate No. 3H10 last month. Military and commercial orders will be sought for it.

FIRST COMMERCIAL TWIN-ROTOR HELICOPTER is the Piasecki PH-42, an airline version of the military H-21 now undergoing CAA certification. The PH-42 will seat 16 to 19 passengers in a cabin 20 ft. long. It is powered by a single 1,425-hp. Wright R-1820-103 engine. Gross weight is 13,300 lbs., empty weight 8,730 lbs., and useful load 4,570 lbs. Piasecki Helicopter Corp. said it is currently being evaluated by N. Y. Airways, Sabena Belgian Airlines and other operators. Delivery in 1956 is offered. Price was not announced.

LINDBERGH'S 1927 SPIRIT OF ST. LOUIS RYAN MONOPLANE has been duplicated by Paul Mantz, and will be flown in a movie, "The Spirit of St. Louis," starring James Stewart.

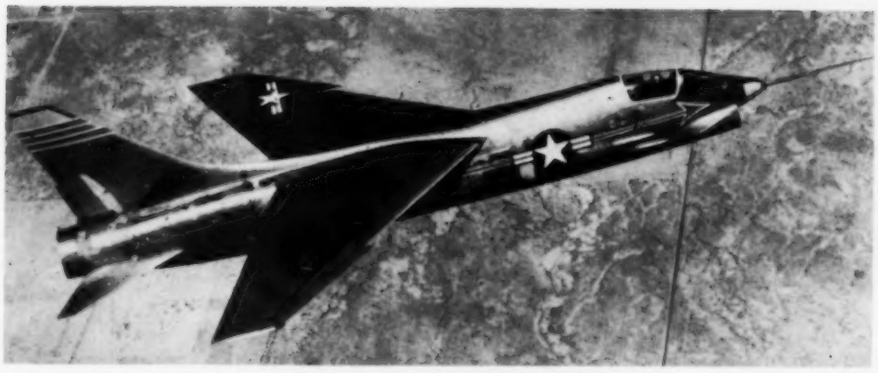
FIRST TRANSATLANTIC FLIGHT BY THE LEARSTAR has been made nonstop between Gander, Newfoundland, and Paris. The 2,570-mi. distance was flown in 8 hrs. 50 mins., at an average speed of 291 mph. Cruising altitude was 9,000 ft. Lear, Inc., said the flight was made by a Learstar recently delivered to Charles B. Wrightsman of Florida.

FIRST CONTRACTS HAVE BEEN AWARDED for a new Love Field terminal and terminal area facilities in Dallas costing $10,000,000. It will be located on the southeast side of the field, where Braniff Airways and Southwest Airmotive are now located. These firms will move into new and larger quarters on the east side of the field, the Braniff base to cost $4,000,000 and the new Southwest Airmotive base $2,000,000.

AIRBORNE RADAR FOR PAN AMERICAN AIRWAYS' entire DC-6 and DC-7 fleet has been ordered at a cost of $2,000,000. It is the new RCA AVQ-10 radar.

BELL WILL BUILD 21 ARMY H-13H HELICOPTERS under a new contract. The H-13H is powered by a 250-hp. Lycoming derated to 200 hp. A commercial version, the Model 47G-2, recently landed and took off from 15,771-ft. Mount Blanc in Europe while carrying a pilot and a passenger.

A 2-PL. TRAINER VERSION OF THE SUPERSONIC CONVAIR F-102A has been ordered by the Air Force for combat proficiency training.



FIRST PHOTO OF NAVY'S NEW CHANCE VOUGHT XF8U-1, carrier based and supersonic in level flight. No details have been released, but XF8U-1 has lightweight airframe with powerful J57 engine and afterburner for maximum speed and climb.
—(Chance Vought Photo.)

FIRST SALE OF SURPLUS FAIRCHILD C-82 PACKETS, now in storage at Kelly Air Force Base in San Antonio, was 12 airplanes purchased by the Brazilian government. Fairchild will overhaul and modify the transports. The deal marks Fairchild's re-entry into Latin American aviation.

HUGHES TOOL AND STANDARD OIL OF CALIFORNIA have ordered executive versions of the turboprop Vickers Viscount.

FIRST EXECUTIVE BELL 47H-1 HELICOPTER has been delivered to the president of Colombia. Bell Sales

(Continued on page 40)

FLIGHT MAGAZINE

Including SOUTHERN FLIGHT and MODERN AIRPORTS

JULY, 1955 **VOL. 44, No. 1**

COVER: This excellent portrait of the popular 65-hp. Mooney Mite is also a close-up of Mooney Test Pilot Bill Taylor, for the camera was close enough for a cockpit picture. Note how the canopy has been "humped" on the latest Mite for more room. It is in production at Kerrville, Texas.
—(Mooney Aircraft Photo.)

Air Report—SIGNIFICANT TRENDS AND NEWS 5

Questions and Answers for Operators 8

Just Among Ourselves—EDITORIALS: FOR WANT OF A NAIL; MR. TEXAS; FRIEND OF LOCAL SERVICE 13

All Bird — But No Feathers—BY JOE DE BONA—A CESSNA 310 OWNER'S VIEWS AND EXPERIENCES 17

4-Pl. Mooney in Production—MORE DETAILS OF THE 150-HP. MARK 20 WHICH CRUISES OVER 165 MPH. 18

Beech Begins Jet Junket—FIRST AMERICAN DEMONSTRATIONS INTRODUCE JET PERFORMANCE FOR BUSINESS FLYING . . . 20

The Howard Super Ventura—A 300-MPH. BUSINESS TRANSPORT WHICH CAN CARRY 14 PASSENGERS 2,300 MILES WITH A RESERVE 22

Exhaust Augmentors for Dove Speed—NEW INSTALLATION REDUCES DRAG, CUTS BACK PRESSURE IN HALF AND GIVES BETTER COOLING AT LESS WEIGHT 24

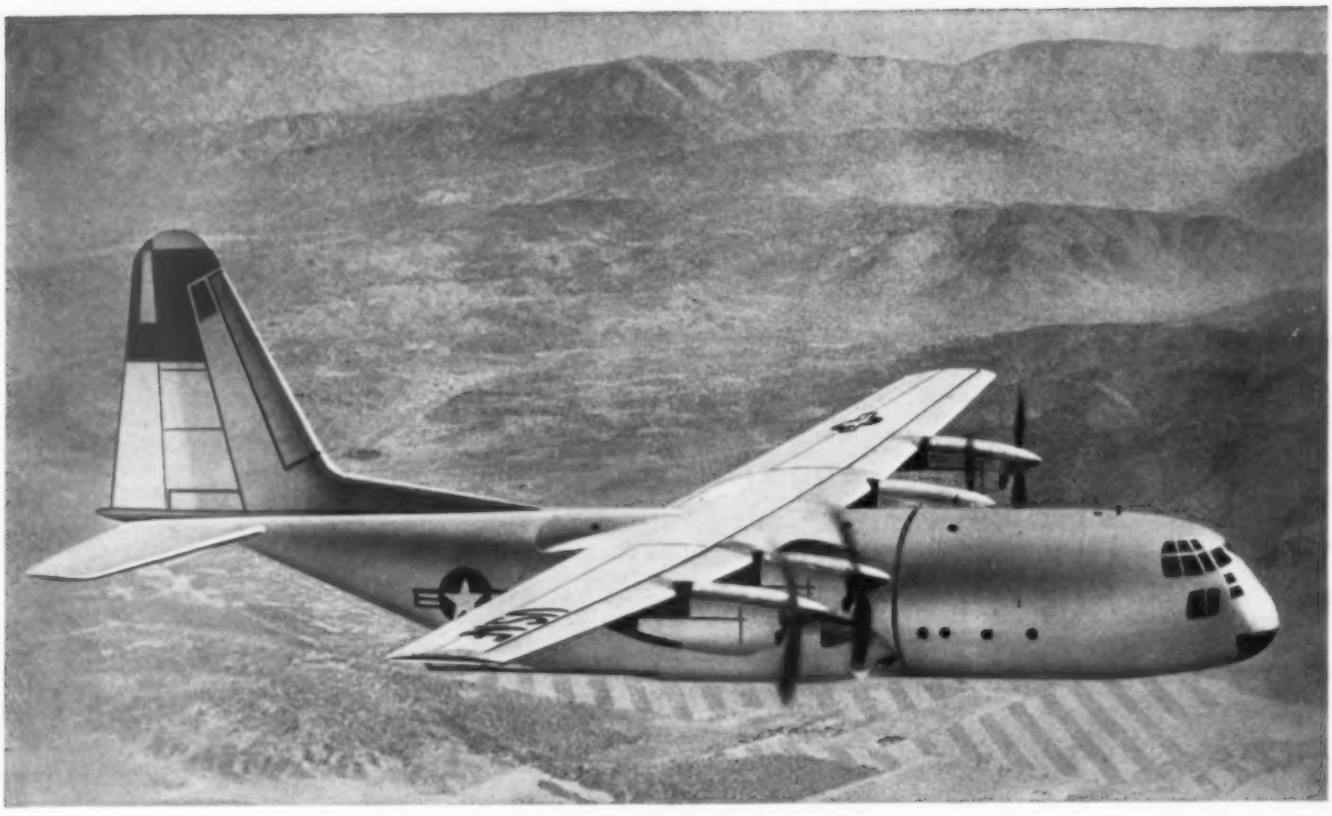
The First Blue Ribbons—AWARDS FOR BUSINESS PLANE EXCELLENCE 30

Airmen's Calendar—COMING EVENTS 40

GEORGE E. HADDAWAY, Editor-Publisher; TOM ASHLEY, Managering Editor; FRED N. STONES, JR., Business Manager; E. H. PICKERING, Consultant; P. O. Box 750 (1901 McKinney Ave.), Dallas, Texas—Telephone STerling 2125

FLIGHT MAGAZINE, July, 1955, Vol. 44, No. 1. Published monthly. Publication office, P. O. Box 750 (1901 McKinney Ave.), Dallas 1, Texas. Price 35c single copy. Subscription rates: United States, one year, $3.00; two years, $4.00; three years, $5.00. Established February, 1934. Entered as second-class matter at the Post Office, Dallas, under the act of March 3, 1879.

Copyright, 1955, by Air Review Publishing Corporation.



First Flight of the **Hercules**

powered by America's first production Turbo-Prop engines

A NEW era in America's military transport operations was opened when the U.S. Air Force's first production Turbo-Prop cargo transport, the Lockheed C-130A Hercules, took off from Dobbins Air Force Base, Georgia.

Powered by four Allison T56 Turbo-Prop engines, the 54-ton transport was air-borne eight seconds after the brakes were released and climbed to 2,500 feet by the time it passed over the end of the 10,000-ft. runway. Test Pilot B. A. (Bud) Martin said: "It is the finest flying airplane I have ever operated."

Developing more than 2.3 horsepower per pound of engine weight, and with a frontal area approximately half that of present transport piston engines, the 3750-h.p. T56 gives the four-engine Hercules a speed exceeding that of many World War II fighters.

A commercial version of the military engine – the Allison Model 501 – will bring new standards of faster, quieter, more comfortable air travel in airliners that can operate from any airport now served by commercial air carriers. And, with its economical use of lower-cost fuel, this new engine will substantially reduce the operating cost of the all-cargo transport.

These great new Turbo-Props reflect the knowledge Allison has gained in designing and building gas turbine engines which have flown more than six million hours. These engines are daily flying the equivalent of one hundred trips around the world – *experience where it counts most – in the air.*

ALLISON Division
of General Motors
Indianapolis, Indiana
Builder of Turbo-Jet and Turbo-Prop Aircraft Engines

GM
AIRCRAFT POWER

ALLISON
TURBO-PROP ENGINES
American built for the new era in air travel

Opportunities for engineers in Allison's $75 million expansion of aircraft engine research and development facilities. Write: Technical Employment Section

BENDIX WEATHER RADAR FOR EXECUTIVE AIRCRAFT

PUTS A FINGER ON STORMS MILES AHEAD!

At the tip of the finger in the illustration above, you see an actual storm. It's on the scope of the new Bendix* Airborne Weather Radar system. This ingenious device penetrates storms as far as 150 miles ahead. It gives the pilot a complete "picture" of what's in store—even at night or under instrument conditions.

By referring to this scope, the pilot can pick a smooth path through or between storm areas. *For example: In the scope picture above, the white areas are a line of storms. Those with black centers and thin white lines represent great turbulence. The small plane (at bottom-center on the scope) shows the pilot the position of his plane in reference to the storm. It indicates that by changing course very slightly, he will find a smooth, safe route.*

In addition to greatly improving flight safety through storm areas, Bendix Airborne Radar can be used as a navigational aid and for terrain mapping. It's available on either X-band (3.2cm) or C-band (5.5 cm) frequencies. Let us show you how Bendix Weather Radar can help your operation.

For complete information, write to E. E. Baker, 8633 Loch Raven Boulevard, Baltimore 4, Md.

BENDIX RADIO DIVISION ● BALTIMORE 4, MARYLAND

West Coast Sales: 10500 Magnolia Blvd. N. Hollywood, Calif.
Export Sales: Bendix International Division 205 E. 42nd St. New York 17, N. Y., U.S.A.
Canadian Distributor: Aviation Electric, 200 Laurentian Blvd., Montreal, Quebec

Bendix AVIATION Radio

Bendix AVIATION CORPORATION

*Reg. U. S. Pat. Off.

FIRST AMERICAN-BUILT JET AIRLINERS will be the turboprop Lockheed Electra (left) and the pure-jet Douglas DC-8 (right). The DC-8 will carry 80 to 125 passengers nonstop between U. S. and European cities with a top speed of over 550 mph. flying Los Angeles to New York in 4.5 hrs. and New York to Paris in 6.5 hrs. The over-water version will gross 257,000 lbs., the domestic version 211,000 lbs. Four advanced Pratt & Whitney J57's in pods will power the DC-8. First flight is scheduled for late 1957. American Airlines has ordered 35 new Lockheed Electra turboprops, with deliveries beginning in 1958. The Electra will cruise at over 400 mph., which is about 100 mph. faster than the fastest European turboprop airline in service today. Costing $65,000,000 for a fleet of 35, the Lockheed design is based on the 3,750-hp. Allison 501 turbine but can also utilize engines of 5,000 hp. It will seat 64 persons, will have a 2,000-mi. cruising range and will gross 98,500 lbs. with 4,178 gals. of fuel. Span is 95 ft., length 101 ft., and height 34 ft.

Questions and Answers for Operators

Leases Should Stress Airport Needs

OVER the past twenty years we've seen several hundred leases between operators and public agencies owning airports. At least a hundred times we've been asked to send some prospective lessor or lessee a sample of a satisfactory lease. We have seen good leases, mediocre leases and some which were just plain terrible.

The most common fault has been in the failure of the owning agency to recognize its own responsibility in the promotion of aviation at its own airport, with the attendant inability to express clearly or at all what it expected of its tenant-operator. This was particularly true in the matter of operator-manager agreements and leases. If both parties have a clear understanding of what each expects of the other the success of an operation is more likely to be possible. That means that both landlord and tenant must have a working knowledge of airports and aviation.

A few days ago we had an opportunity to read a lease recently executed between an airport board and an operator-manager which fully demonstrated that each of the parties knew what the airport needed. We immediately wrote both parties asking for permission to use the lease in this column. Unfortunately, at the time this is being written we have heard from only one of the parties. However, we can bring out here the exceptional parts of the lease and that is what we will try to do. The airport board in developing this five-year lease indicated that it knew what the airport needed and we consider that the operator in accepting the lease concurred.

The outstanding part of the lease is headed: Business Authorized: Under that heading are listed the services the tenant is expected to furnish or which he may furnish at his option, as follows:

"1. Shall store and sell gasoline, oil and greases as are necessary and convenient to aviation, and for which he shall have the exclusive privilege. Service for these products shall be available, as a minimum, from 7 a. m. to sunset every day. The office shall be open continuously from 7 a. m. to sunset every day."

Policy: the board feels that active efforts should be made to stimulate and encourage transient business. These efforts should include prompt, efficient, and courteous service; personalized courtesies (such as cleaning windshields, emptying ash trays, etc.); maintenance of clean, sanitary rest rooms; adequate supplies of current aviation charts; assistance in ground transportation; recognition and promotion of courtesy charge cards; promotional schemes (such as follow-up letters and any other practical form of advertising.)

"2. Shall conduct a flying school providing planes, instructors, and mechanics necessary therefor. The tenant shall have available at least one licensed two-place airplane."

Policy: the board believes that pilot instruction must be an actively sought, or an integral part of the business in order to expand aviation activities. Efforts should include: interested and persistent follow-up of prospective students; making high quality instruction available, in general, at the student's convenience, particularly covering after-work hours, week-ends and holidays; instruction rates as reasonable as possible; promotion of low-cost instruction by taking advantage of Korean veterans' G. I. Bill, organization of classes, etc.

"3. Shall conduct a charter service providing pilots, mechanics, and service necessary therefor. The tenant shall have available one licensed four-place airplane which includes equipment for conversion to air ambulance service."

Policy: the board feels that this service must be not only a source of income, but an effective tool in stimulating interest in aviation. In order to be effective, the service must include: reasonable rates; availability 24 hours a day, 365 days a year (except, of course, for legitimate conflicts in other aviation activities and weather); active solicitation and advertising among hotels, as well as civic, business, and professional groups; promotion of charter for air ambulance and air funeral hearse activities; charter activities in relation to our expanding recreational area should be thoroughly explored, (aerial tours, etc.).

"4. Shall conduct an aircraft rental service, providing planes and mechanics necessary thereto. The tenant shall provide at least one licensed two-place and one licensed four-place airplane for this service; these planes may be the same as those required in paragraphs 2 and 3, and so publicize these services and rates."

Policy: the board feels that such a service, particularly made available at reasonable rates during off-hours and week-ends, will serve as a stimulus to re-awaken interest in licensed pilots who do not at present own an airplane.

"5. Shall install, equip, and maintain, during usual business hours, reasonable facilities for the maintenance and repair of aircraft, and also agrees that a qualified, certificated A. & E. mechanic and adequate equipment will be available for these services."

Policy: the board is unanimous in its feeling that the designated mechanic should be approved by the board. Other specifications should include: active efforts to secure business from surrounding communities, particularly from the over-crowded facili-

(Continued on page 41)

A new kind of oil for a new kind of flight

Capital Airlines' swift new turbo-prop Viscounts are lubricated with an oil that didn't even exist until a few years ago.

Engineers who were then designing advanced turbo-prop and turbo-jet engines ran into almost insurmountable difficulties: there just wasn't an oil that could meet the tough lubrication specifications of the proposed engines.

Esso research teams went to work on the problem. They produced a *synthetic* oil which was named Esso Turbo Oil 35. This oil not only lubricates the famous turbo-prop Viscounts, but is used also in advanced jet aircraft.

This triumph of Esso research adds one more chapter to an already splendid record in the development of new products for civil and military aviation.

ESSO

AVIATION PRODUCTS

As members of one of America's greatest

"Flying Teams"—

We fly the SIGN of SERVICE!

THE team that flies this "Sign of Service" is part and parcel of the record-breaking growth of civil aviation in the United States.

Its reputation for fair play and ready parts availability in supplying the service needs of all types of civil aircraft has been established by the finest type of dealer-distributor cooperation—a unique relationship which has resulted in the foremost service organization supporting private and corporate flying in America.

As distributors of time-proved Goodyear Aviation Products and a complete line of top-quality aircraft parts and accessories—we supply all the needs of many of the local airport service operators upon whom you rely wherever you fly.

* * *

We're proud to be members of this great "flying team"—the team that flies the famous Goodyear Sign of Service!

Look to the team that **takes care** of the busiest planes in America!

AIR ASSOCIATES, INC. *Atlanta, Ga.—Chicago, Ill. Dallas, Tex.—Glendale, Cal.—Miami, Fla.—Teterboro, N. J.*

AIR-PARTS INTERNATIONAL *Glendale, Cal.—New York, N.Y. San Francisco, Cal.—Washington, D. C.*

THE DON HORN COMPANY
353 Madison Ave., Memphis, Tenn.

GENERAL AIRCRAFT SUPPLY CORPORATION
City Airport, Detroit 13, Michigan

GENERAL AVIATION SUPPLY COMPANY
St. Louis, Mo.—Houston, Tex.—Oklahoma City, Okla.

STANDARD AIRCRAFT EQUIPMENT COMPANY
P. O. Box 271, Mineola, Long Island, N. Y.

STANDARD PRODUCTS, INC.
Wichita, Kans.—Tulsa, Okla.—Kansas City, Kans.

VAN DUSEN AIRCRAFT SUPPLIES *Minneapolis, Minn. Boston, Mass.—Washington, D. C.—Teterboro, N. J.*

478A-1 ZIFOR

Collins Zero Indicator for Omni-Range is used for ascertaining the proper zero (North) on VOR audio signal generators and checking the phasing of R.F. Signal generator modulators. Modern circuit design results in negligible drift and low setup time. Portable, only two controls to adjust, it is simple in operation with no internal calibration required.

SENSITIVITY: Signals: 0° ±0.6° gives full indications
ACCURACY: ±0.1 degree
PHYSICAL: 13½" w, 13½" h, 7½" d. Wt. Approx. 21 lbs.

479S-3 GENERATOR

Provides all signals for audio investigations of VOR, tone localizer and glide slope circuits. Designed for rugged simplicity — employing electro-mechanical generators which eliminate the use of tubes. All outputs at levels up to 3 volts.

FREQUENCY STABILITY: Proportional to the frequency stability of 60 cps line
STABILITY: ±0.2% of preset level
PHYSICAL: 19" w, 10½" h, 14" d. Wt. Approx. 88 lbs.

479T-2 GENERATOR

Provides properly modulated signals for checking VOR, localizer and glide slope receivers and instruments. Portable, it may be connected directly to receiver in the aircraft or outside by using a collapsible antenna.

RANGE: 108-136 mc: 280 channels and 329.3-335.0 mc: 20 channels
STABILITY: RF ±0.0065%; AF: 30, 90 & 150 cps ±1%; 9960 cps ±2%; 1000 cps ±15%. VOR accuracy ±0.05°.
PHYSICAL: 19" w, 18" h, 10½" d. Wt. 45 lbs.

479V-2 PRECISION OMNI-BEARING SELECTOR

By using the 479V-2, navigation receivers can be tested and adjusted without introducing omni-bearing selector errors. This unit simulates a design center OBS as specified by RTCA. Inexpensive, the 479V-2 costs less than a standard A/C-OBS. For test panel mounting; the selector has 30° steps selectable by a tap switch.

ACCURACY: ±0.05° azimuth
DIMENSIONS: 3½" h, 19" w, 4" d.

479X-2

The 479X-2 resolver test set is designed to supply precision indexing facilities for calibration of omni-bearing indicators and OBS's. By means of a precision netowrk, resolver instruments of varying characteristics can be indexed within ±0.1° and will give uniform results in Collins 51R-2 and 51R-3 navigation receivers. Only two operational adjustments are necessary for resolver indexing — amplitude control and input level control. A 3-position selector switch and phase level adjustments located on the panel allow rapid calibration, when required.

ACCURACY: ±0.1°
DIMENSIONS: 3½" h, 19" w, 4" d.

478H-1 TEST SET

The 478H-1 and associated 413F-1 Power Supply provide complete self-contained testing facilities for the subassemblies of the 618S Transceiver. It also provides a convenient test station for detailed circuit checks. Lower portion of the test set panel carries all operating controls required to simulate functions of the 618S. The 413F-1 Power Supply provides all necessary operating voltages for the 478H-1.

DIMENSIONS: 21" x 17½" x 11"
POWER SOURCE: 115 v a-c, 50/60 cps @ 6 amps.

Now...

YOU CAN BE SURE

with

Collins

PRECISION TEST FACILITIES

You can obtain new confidence in the accuracy of your radio equipment when you use Collins Test Instruments. This exceptional test equipment is designed for accuracy, simplicity of operation and ruggedness.

Three distinct advantages are attainable with Collins Test Sets.

SAFETY — because radio units have been accurately tested and calibrated.

ECONOMY — more efficient use of technicians with faster, easier servicing.

UNIFORMITY — better equipment utilization by maintaining truly interchangeable navigation and communication equipment.

Other units not shown include 479U-1; compact, inexpensive VOR ramp test unit; 478C-1 A/C heading signal simulator, and the 180M-1 antenna tuning unit test set.

COLLINS RADIO COMPANY

COLLINS

CEDAR RAPIDS, IOWA
1930 Hi-Line Drive, DALLAS 2, TEXAS
2700 W. Olive Avenue, BURBANK, CALIFORNIA
261 Madison Avenue, NEW YORK 16, NEW YORK
1200 18th Street, N. W., WASHINGTON, D. C.
Collins Radio Company of Canada Ltd.
74 Sparks Street, OTTAWA, ONTARIO

Curious?

MOODBEAMS #7

Being curious about a fizzing firecracker is comparable, say, to NOT being curious about the condition of metal fuel tanks in an airplane. On the one hand, Hope Frarer (24, 5′ 5″, 118 lbs., blue eyes, blonde hair) may get the lipstick blasted right off that pretty, perky face of hers. On the other hand, a pilot with a leaky gas tank may — well-llllll, you know! If you aren't sure about your tanks, we urge you to get curious NOW, and let us remove, clean, inspect, and repair them; slush them with a protective compound, and reinstall them in apple-pie order. In any event, this should be done every thousand hours or two years.

Southwest Airmotive COMPANY

LOVE FIELD ☆ DALLAS

Just among ourselves

EDITORIALS

FOR WANT OF A NAIL

ONE of the many highlights of the recent Aviation Writers Association's annual meeting in Canada was an air show alongside Toronto's lake shore, where the writers and more than 100,000 Canadians had a view of various U. S. and Canadian aircraft.

It remained for a young Czech stunt pilot in a small, low-wing, 125-hp. trainer to steal the show completely. Fast moving jets making low passes in front of the crowd and shooting skyward in sharp pull-ups and climbing rolls failed to raise a ripple. But the capable little Czech produced a veritable din of spontaneous hand clapping and vocal cheers. Veteran, grey-haired aviation writers covering air shows for years had never seen such fantastic acrobatics as turned in by the low-flying pilot in the Motokov trainer, even in the days of Mike Murphy, Al Williams, Bevo Howard and Tex Rankin. The poor old jets and the obsolete crates of World War II simply fell flat!

To us, this fantastic flight demonstration of an iron-curtain pilot in a little trainer and its terrific impact on the crowd drives home the simple fact that here in the U. S. we've become too jet-happy, probably at a tremendous cost in public understanding and public appreciation of the airplane.

The great clamor that went up recently over indication that the Soviets were threatening our theoretical air power supremacy resulted in appropriations of billions for accelerated bomber and fighter production.

There is a limit this nation can go in just purchasing hardware. It is tragically unrealistic to think we can maintain an impregnable air power structure by just ordering more planes or by speeding up the assembly lines of certain models. Sincere and dedicated proponents of air power know there are other factors just as important: Procurement of human beings — volunteers if you will — adequate pay and housing and pensions for them, more and better bases, farsighted research and development, intelligent reserve programs, plus a little attention to civil aviation's vital logistical role in our defense structure. Superimpose the cost of these elements of air power upon the mounting billions being appropriated for production line fighting craft and the picture is anything but rosy.

A few weeks ago there were published reports that a congressional investigation would be made into aircraft manufacturing profits. The root of our trouble is not in what certain companies are making. This nation's record is mighty clear on profiteering, and the history book will show it is generally short-lived when it does occur. *What this country needs is a deep probe into the question of whether or not our military preparedness programs are in proper balance.*

Every American citizen should be rightfully proud of his aviation industry and the nation's aviation heritage. But there are too many obvious indications that the whole emphasis today is on purchasing more and more airplanes, of freezing our designs while tragically neglecting the human factors and the myriad of other basic elements a large air establishment must have before a superior flying weapon goes out to fight the enemy.

An immediate top level, non-political investigation into the matter of air power balance and into the Symington charges is desperately needed before time runs out on us.

MR. TEXAS

THE death of Fort Worth's Amon G. Carter last month brings to a close a productive and picturesque life of a man who dedicated his years to many worthy causes, not the least of which was that of aviation development.

Amon G. Carter was no ordinary man. His was a Horatio Alger story, starting out as a newsbutch on a railroad, working his way up from poverty and obscurity to the ranks of one of the nation's most influential newspaper publishers. His sincere interest in aviation dates back to pre-World War I days when he was responsible for one of the first flight demonstrations ever held in Texas. Early to see the possibilities of commercial aviation he not only invested in pioneering ventures but flew many a trail blazing flight over the face of the globe.

He understood aviation, he patronized it and supported it whenever and wherever his influence was needed. Perhaps his most important contribution to aviation lay in demanding that his *Fort Worth Star-Telegram* adequately cover aviation in its news and feature columns throughout his newspaper career. A more permanent and visible landmark in his memory, however, will be Ft. Worth's ultra-modern airport facility which bears his name as Amon Carter Field.

He was truly aviation's friend. And everybody in the business, from the shine boy in the airport barber shop to the major aviation executive, mourns his passing.

FRIEND OF LOCAL SERVICE

OUR annual study of Local Service Airline progress published last month emphasized the point that if Federal aviation agencies failed to develop aeronautics in this nation as set forth in our basic aviation statutes, it was comforting to know that the Congress would step forward and order specific development in the public or national interest.

Such was the case in the matter of permanent certificates for the local airlines. Both the administration and a majority of the membership on the Civil Aeronautics Board were on record against permanent certification. In

Those three mice

...wouldn't get to first base

Don't blindfold yourself to your own future. Know where you want to go, and you'll see how much better the opportunities are at Fairchild.

Engineers with an eye on their futures are looking to Fairchild for careers that lead to the top, because they know at Fairchild they'll work in the country's most advanced and active research centers. They'll be in right from the beginning on everything new that's happening in aviation.

Fairchild is looking now for experienced aerodynamists and designers. The right, wide-awake men will find unparalleled opportunity to move straight ahead as fast as their abilities let them.

Put yourself in a position with a future – at Fairchild. Send your resume today to Walter Tydon, Chief Engineer.

ENGINE AND AIRPLANE CORPORATION
FAIRCHILD
Aircraft Division
HAGERSTOWN, MARYLAND

"where the future is measured in light-years"

fact, one of the most damnable aviation documents ever to emanate from Washington was the ACC's aviation policy statement issued last year under the signature of Robert B. Murray, Jr., who was then chairman of the Air Coordinating Committee. Had this nefarious policy been carried out, air transportation in the U. S. would have been set back at least ten years. The majority of the Civil Aeronautics Board members went down the line with the basic philosophy of the ACC report and the then chairman of the Board, Chan Gurney, spoke out against permanent certificates for the majority during hearings on the bill.

But fortunately there was one lone voice in the wilderness during all this attempted throat-cutting operation. It came from CAB member Joseph Adams, the only pilot on the Board who has consistently fought for the preservation of the local air service "experiment." He spoke out against the original ACC report last year in addition to vehemently supporting the permanent certification legislation during hearings this year.

Last year Joe Adams forwarded his view to the President's Air Coordinating Committee, which views contrasted sharply with those of his cohorts on the Board. He said:

"Our present local air service system is by no means perfect. It must continually be improved in the same way that it has been improved over the last eight years. I nevertheless believe that it is here to stay, just as this entire Board through its chairman said it was her to stay on June 22, 1951, in a statement made before the Local Service Airline Seminar (cosponsored by FLIGHT MAGAZINE) at Purdue University, Lafayette, Indiana. . . . I do not agree that our well-established local air service system should be disrupted or eliminated by this Board's announcing now, in this policy statement, that the one factor of cost is to determine whether cities, routes, or entire systems should be transferred from local service to trunk-line service category; and that absent such transfer, true local air service to these cities, routes or local systems will be entirely eliminated."

Joe Adams has gone down the line consistently for extending air transportation to all our people.

The Congress of the United States saw fit to support his views. It's one more interesting case where a hard-fighting minority finally won out against considerable odds. It has happened before in aviation development and will certainly happen again. ★★★

HAVE YOU FLOWN THE Tri-Pacer 150?

Fast, far-ranging, yet simpler to fly than any plane available today.

That's the new 150 horsepower 1955 Tri-Pacer 150 with over 130 mile-an-hour cruise, increased pay load, more climb and new, striking beauty.

Yes, the Tri-Pacer has all the performance needed for useful, time-saving, money-making business travel. It also combines the most features to simplify flying for the man just starting to use a plane for business—tricycle landing gear, simplified controls and built-in flight safety so characteristic of all Piper planes.

Whether you're just starting or an old hand, you'll find the Tri-Pacer 150 the ideal combination of solid, useful performance and flying ease...and priced far less than any other production 4-place plane. See the beautiful new 150 at your Piper dealer's today or write for new full-color brochure, Dept. F-7, Piper Aircraft Corp., Lock Haven, Penna.

THE TRI-PACER COMBINES THE MOST FEATURES TO SIMPLIFY FLYING

TRICYCLE LANDING GEAR takes much of the skill out of take-offs and landings, makes "stalling-out" unnecessary, eases handling in high winds. Exclusive on the Tri-Pacer in its class.

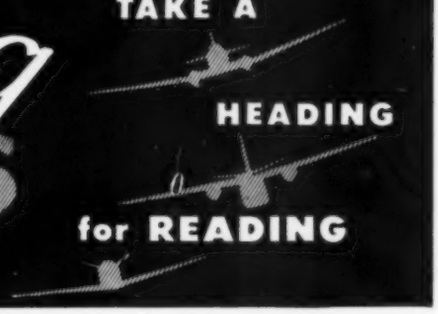
SIMPLIFIED CONTROLS inter-connect rudder and ailerons for easier learning, more restful travel. Another Tri-Pacer exclusive in its class.

BUILT-IN FLIGHT SAFETY. Piper has always made inherent flight safety paramount in every design. Tri-Pacer is spin-resistant, can only be stalled with most deliberate effort. It's a plane you can fly with utter confidence.

MORE PEOPLE HAVE BOUGHT PIPERS THAN ANY OTHER PLANE IN THE WORLD

PIPER AIRCRAFT CORPORATION
LOCK HAVEN, PENNSYLVANIA

Announcing The WINNERS



FIRST ANNUAL READING AVIATION AWARDS FOR HIGH STANDARDS OF EXCELLENCE IN INDUSTRIAL, EXECUTIVE AND PRIVATE AIRCRAFT

	Multi-Engine Over 12,000 Lbs.	Multi-Engine Under 12,000 Lbs.	Single-Engine Aircraft
Best of Class	Sun Oil Co., Douglas DC-3 N-26S, Capt. Raymond Higgins, Chief Pilot, Philadelphia	Dairypak, Inc. Beech D18S N-2326A, Capt. P. Van Treuren, Chief Pilot, Cleveland	Character Foundations, Inc., Beech Bonanza N-3813N, Herman Kress, Owner-Pilot, New York City
Best Exterior	Sun Oil Co., Douglas DC-3 N-26S, Capt. Raymond Higgins, Chief Pilot, Philadelphia	Dairypak, Inc., Beech D18S N-2326A, Capt. P. Van Treuren, Chief Pilot, Cleveland	France Packing Co., Ercoupe N-94822, E. A. France, Owner-Pilot, Philadelphia
Best Interior	Davison Chemical Co., Douglas DC-3 N-502, Capt. E. F. McFee, Chief Pilot, Baltimore	Virginia Coal & Iron Co., Beech D18S N-80048, Capt. Charles Sowa, Chief Pilot, Philadelphia	H. V. Beronius, Jr., Navion N-91668, H. V. Beronius, Jr., Owner-Pilot, Detroit
Best Equipment and Presentation	Pittsburgh Consolidation Coal Co., Douglas B-23 N-34C, Capt. Louis Ramey, Chief Pilot, Pittsburgh	Precision Castings Co., de Havilland Dove N-4271C, Capt. Richard Dower, Chief Pilot, Syracuse	American Sterilizer Co., Beech Bonanza N-8930A, R. C. Jarecki, Pilot, Erie, Pa.

CONGRATULATIONS to the winners — and to the many aviation firms everywhere for their outstanding work and equipment on the winning planes!

Award winners will be back next year to defend their honors in the 7th Annual Maintenance and Operations Meeting at Reading. We're already working to make it the biggest and best ever. Meanwhile, join our many friends who always take a heading for Reading for complete aircraft service and maintenance needs.

—A. M. BERTOLET, *President*
Reading Aviation Service, Inc.

RAS INCORPORATED

READING
AVIATION SERVICE, INC.
Municipal Airport • Reading, Pa.

All Bird—But No Feathers

By JOE De BONA

EDITOR'S NOTE: The author is a Bendix Trophy Race winner who now uses a Cessna 310 Twin in his business travel as an insurance broker. We recently asked his opinions of and experiences in the Cessna 310. His reply follows:

I'M now flying my second Cessna 310, having taken delivery of No. 2 last month at the factory. The more I fly it, the more I like it. Cessna has a completely modern, high-performance, all-purpose business airplane in its Model 310. But even though it is a twin-engine airplane, it is a personal type design in which the flying businessman can obtain excellent air travel usefulness all by himself.

For instrument flying, I installed omni, ADF, airway inner and outer marker lights, ILS and two VHF transmitters. The 310 gives me a real solid, stable feeling while flying instruments. Again, it is completely a one-man airplane — you can handle it yourself without any help. As an example of its stability, a wing can drop 10 degrees while you are changing stations or checking your Jeppesens and she will still hold her heading without turning into the low wing.

The Cessna tip-tanks greatly enhance its directional stability and dampen down the shocks, so that the 310 handles beautifully in turbulence. I feel perfectly safe in saying that you will have the same comfortable and confident feeling in the 310 during turbulence that you would have in a good Lodestar. Anybody familiar with that airplane's outstanding characteristics will really appreciate what I mean. They just don't design many airplanes which handle as nicely as a Lodestar.

In icing conditions, I have noted the following points of interest about the 310: Almost immediately the tip-tanks will ice up. The cooling effect of the gasoline in them must accelerate this condition. Last winter I was in light to moderate icing for about an hour and a half. Upon landing, I noted that the ice on the tip-tanks was approximately one-half inch thick on the first one-third of the tank and about one-quarter inch thick on the backsides. However, I noticed no sluggishness on the controls and only a very slight decrease in air speed — with no "sink" feeling on the approach.

An interesting view of the Cessna 310 from beneath. It is powered by two 240-hp. Continental engines, has a 1,750-lb. useful load at a 4,600-lb. gross weight, and cruises over 205 mph. at 8,000 ft. on 70% of power. Fuel is carried in tip tanks having 50-gal. capacity each. Main gear retracts into wing center section.
—(Cessna Photo.)

The wing and horizontal stabilizers take on a surprisingly small amount of ice — just narrow bands on the dead-center leading edge. It builds forward only. From my personal observations of this, I have decided against wing de-icer boots. As I see it, the place where possible trouble may come from will be with ice on the tip-tanks because of having to stay in the ice too long and the boots could be of no assistance there.

Ice adheres quite rapidly to the leading edge of the rudder because it is fiberglass. In this case, the ice builds up forward in a V shape — the opening of the V being the direction of flight. My personal opinion is that this fiberglass leading edge should be changed so that it will be the same as the leading edge of the horizontal stabilizer. Although I could not feel or notice any effect on the rudder, I am most certain that this ice build-up might present a buffeting of the rudder in a case of longer exposure to icing conditions.

Propeller anti-icers are a must but the airplane's provision for a 5-quart capacity should be increased. I can run out of 5 quarts of fluid in about 20 minutes with the control wide open.

One remarkable thing about this airplane is that at no time have I ever had to apply carburetor heat. I really do not think you can develop carburetor ice in this airplane.

As for general impressions and performance, and speaking purely personally so that you will consider this as just one man's experience, I always find the 310 trues out in normal operation between 205 and 210 mph. at altitudes of 8,000 to 10,000 ft. This gives the 310 a range of approximately

(Continued on page 34)

Here's production-model Mooney Mark 20. It has 1,115-lb. useful load at 2,450-lb. gross weight; 50-lb. fuel capacity for 1,000-mi. range at economy cruising speed of 150 mph. Engine is 150-hp., 4-cylinder Lycoming.
—(FLIGHT MAGAZINE Photos by E. H. Pickering.)

4-Pl. Mooney In Production

MOONEY AIRCRAFT this month began production and marketing of its much discussed new $12,500 4-place Mark 20, a high-performance and impressively efficient business plane of modern design with manually retractable tricycle landing gear and the first personal-type airplane using a laminar-flow airfoil for reduction of drag.

Norman Hoffman, executive vice president of the Mooney firm, reorganized last year with Hal F. Rachal of Midland, Texas, as president and W. W. Evans as secretary-treasurer and general manager, said distributors had been selected and had placed suf-

ficient orders for the factory to begin production immediately following CAA certification.

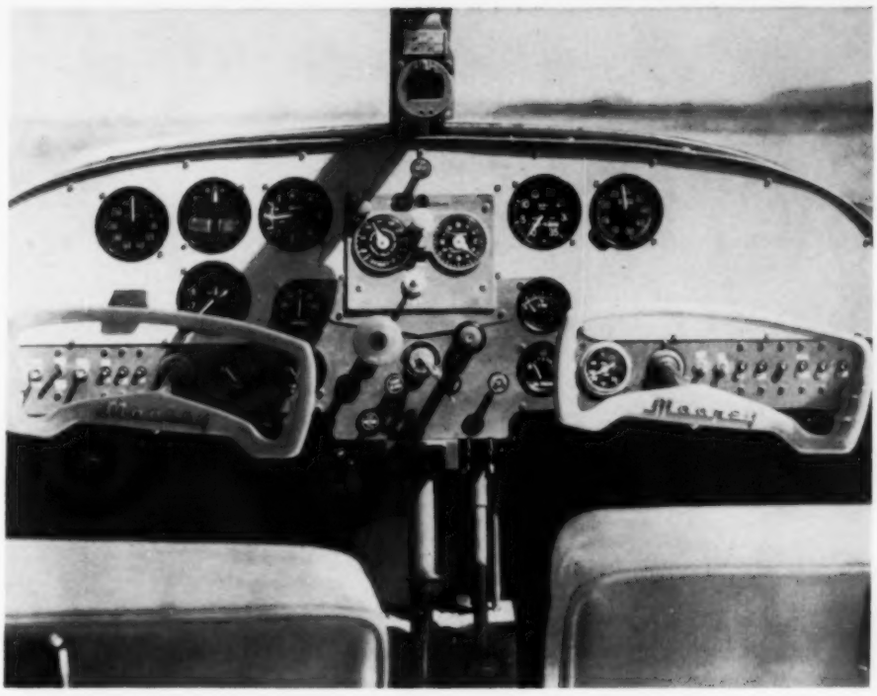
Mooney has been producing its famous single-seat Mooney Mite all along. In its newest 1955 version, it has an enlarged canopy and cockpit for greater comfort than ever.

But it is the new 4-place Mark 20 which has caused so much discussion in business plane circles. With only 150 hp., it cruises at more than 1 mph. per horsepower — its advertised cruising speed is more than 165 mph. at 7,000 ft. and 75% of rated power, which is 2,450 rpm. at 22.7 ins. of manifold pressure. Its 4-cylinder Lycoming engine is rated at 150 hp. at 2,700 rpm., and drives a constant-speed, controllable-pitch, all-metal Hartzell propeller. Twin exhaust augmentor tubes are utilized in the engine installation for improved cooling through exhaust-pumping, the elimination of cowl flaps, and jet-thrust exhaust effect.

The Mark 20 is also distinguished for having a greater payload than any other single-engine 4-place personal-type airplane in the world — empty weight is 1,335 lbs., gross weight 2,450 lbs. and useful load 1,115 lbs. With 50-gal. capacity fuel tanks full, weight available for 4 persons and baggage is 800 lbs. The baggage compartment has a 120-lb. capacity.

Range of the Mooney Mark 20 at 170 mph. is 890 miles in 5.4 hrs. At an economy cruising speed of 150 mph., range is 1,000 miles in 6.7 hrs. These are factory figures and give the

(Continued on page 37)



Standard instrument panel is shown at top right, with manual gear (large lever) and flap controls beneath throttle and propeller controls. An idea of interior roominess is furnished by cabin close-up view. Photo below shows Mooney's size when compared with a Bonanza. Nose wheels are same size.

—(FLIGHT MAGAZINE Photos by E. H. Pickering.)

First American flights of the M-S 760 were made over New York last month at the start of a nationwide demonstration tour by Beech Aircraft Corporation. The 400-mph. 4-place M-S 760 would sell for $300,000 in this country, Beech spokesmen estimated. It has two 880-lb. Turbomeca Marbore 2 engines and grosses 7,480 lbs. —(Beech Photo by Jim Yarnell.)

Beech Begins Jet Junket

THE first 4-place commercial jet business plane demonstrations in America began last month when Beech Aircraft Corporation officials uncrated and reassembled a Morane-Saulnier Model 760 twin-jet shipped from France, where it was developed.

After preview showings and first passenger demonstration rides in the New York City area in mid-June, the 400-mph. personal type jet was flown to Washington, D. C., for demonstrations and from there was to be used for riding Beech customers and prospects in Wilmington and Philadelphia. It was likely that Pittsburgh, Cleveland, Detroit, Chicago, Rochester, Minneapolis, Wichita, Tulsa and Oklahoma City demonstrations would follow in that order during the remainder of July, with the airplane reaching Texas and California areas during August or later.

Somewhere along the line, or after the civilian tour is completed, Beech will demonstrate the M-S 760 to the Navy at Pensacola in the interest of a possible Navy purchase order for a trainer version which Beech would manufacture under license from Morane-Saulnier.

A decision on offering it to the public is expected to depend on public reaction during several hundred hours of demonstrations at Beech distributor bases. In the New York demonstrations, Beech officials were heard to

Among first passengers in the U. S. flights of the M-S 760 were Mrs. O. A. Beech, president, and Jack Gaty, general manager, of Beech Aircraft. They are shown above, with front seats occupied by Beech Pilot Allen Raines (left) and M-S Pilot Jean Cliquet. Sliding canopy has an inflatable seal for cabin pressurization. Demonstration climb-out from take-off is shown at left.
—(Beech Photos by Jim Yarnell.)

quote "around $300,000" as the possible price of the M-S 760 as a business airplane.

Many details of the French jet were published in these columns last May when Beech revealed its arrangement with Morane-Saulnier to show the airplane in America.

The M-S 760 has caused much speculation whether there is a place for such an airplane in the corporate aircraft field. Some of the Beech distributors who were first passengers in its American demonstration think there is. One of these is J. D. Reed, Beech distributor of Houston, who traveled to New York for his introduction to it rather than wait for its appearance in his territory.

"It's the kind of an airplane I've always dreamed about," commented Reed after his flight in it. "It's quiet, comfortable and fast. We were on about a 20-minute flight. The sky was clear and the air a little rough but even at 300 knots there was no vibration at all — I know because I leaned my head against the cabin structure just to be sure I wasn't dreaming.

"It's a good, solid, well-built machine. With one of the power plants shut off, it is almost marvelous the way this twin-jet does not yaw. When the dive brakes are applied, there's absolutely no change of trim, even at top speed. The M-S 760 flies well and also sets well on the ground and goes straight on its way. From my initial observation, I don't anticipate any trouble checking out propeller pilots.

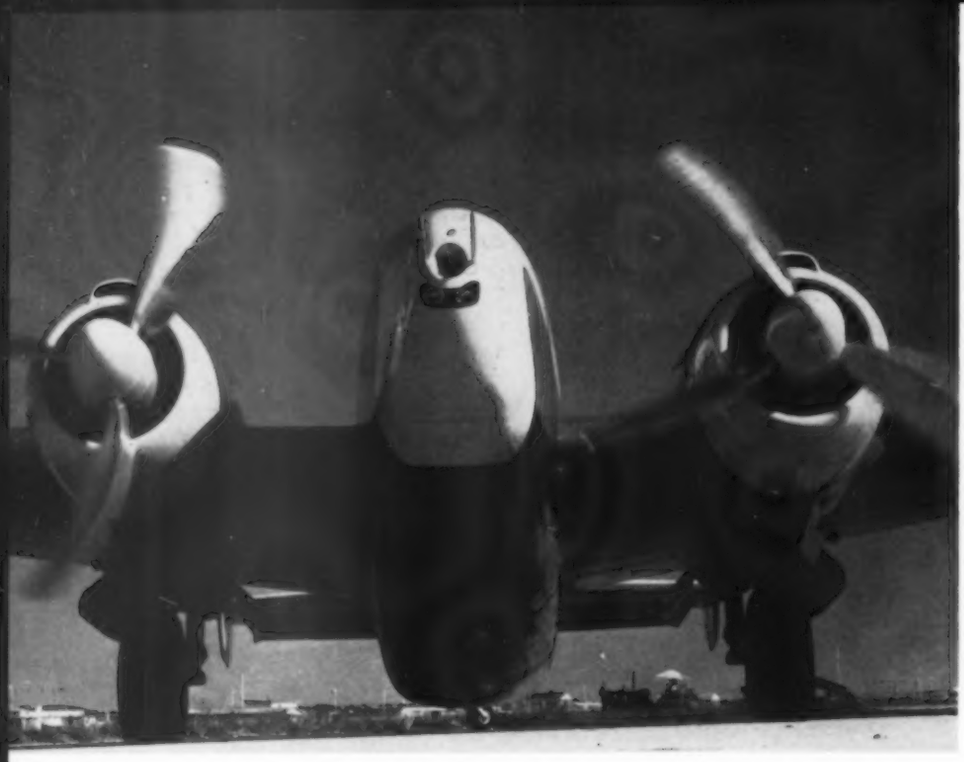
"With a warm, almost hot June sun overhead, we were comfortable inside under the unique and effective built-in canopy sun-shades. And it's so quiet, with passengers sitting forward of the leading edge of the wing, that all four persons can talk in normal tones. Loudspeakers would work wonderfully as in our Beechcraft planes. The interior was quite wonderful; there were many unique features.

"I personally believe there is definitely a place for this twin-jet in the corporate aircraft field."

Others have questioned the M-S 760's range and endurance capabilities as being less than desirable for all-weather operations. Pure-jet aircraft demands very high altitudes for most efficient fuel consumption — the M-S 760 was designed to operate around 20,000 to 25,000 ft. The existing state of the art in commercial aircraft cabin pressurization development has been confined to the 20,000-25,000-ft. and lower levels. In addition to cabin pressurization problems, flight at relatively higher levels involves other difficulties including communications and navigation — radio range reception, for example, is so

(Continued on page 28)

Beech-sponsored tour of M-S 760 attracts attention at every stop. Beech distributors and their prospects and customers are given rides in the twin-jet. Later, it will be demonstrated to the Navy at Pensacola. Main fuel tank behind rear seat holds 260 gals., wing-tip tanks 50 gals. each. —(Beech Photo by Jim Yarnell.)



The Super Ventura conversion is powered by two M-series R-2800 engines rated at 2,000 hp. each. This large amount of power gives the Super Ventura very high performance at its 31,000-lb. gross, the power loading being less than 8 lbs. per hp. At 300 mph., it is said to have a 2,300-mi. range with 200-mi. reserve, while carrying 14 passengers, crew and 1,500 lbs. of baggage.
—(FLIGHT MAGAZINE Photo by E. H. Pickering.)

The Howard Super Ventura

HOWARD Aero Service of San Antonio has begun demonstrating its "Super Ventura" conversion of the fast Lockheed PV-1 Ventura, which was originally developed during World War II from the basic Lockheed Model 18 design as a powerful Navy medium bomber equivalent of the Air Force's North American B-25.

Powered by two Pratt & Whitney M-series R-2800 engines, each rated at 2,000 hp. for take-off, the Howard Aero conversion is outfitted as a roomy executive transport with a cabin for 14 passengers plus crew of 2. Empty weight is put at 18,300 lbs. with a gross weight of 31,000 lbs. for a useful load of 12,700 lbs. Fuel has been increased by the use of integral tanks outboard of the engines, bringing total fuel to 1,300 gals. Speed has been increased through aerodynamic clean-up at several points and a 300-mph. cruising speed at 10,000 ft. is claimed, making the Super Ventura a high-performance transport with long-range capabilities.

"Available now for executive use, the Super Ventura will cruise effortlessly in excess of 300 mph. using normal cruise power for 2,300 miles non-stop with a crew of 2; 14 passengers and over 1,500 lbs. of baggage — while maintaining enough fuel at the end of the flight for more than an additional 200-mile reserve," says Dee Howard, whose Howard Aero Service has been engaged in the conversion project for the past year. "Using higher cruise power settings, the Super Ventura can be cruised at over 330 mph. with an average load. In medium-range operation, it can haul 8,700 lbs. of cargo for 1,000 miles. It has no landing weight restriction and can be landed immediately after take-off at full gross weight."

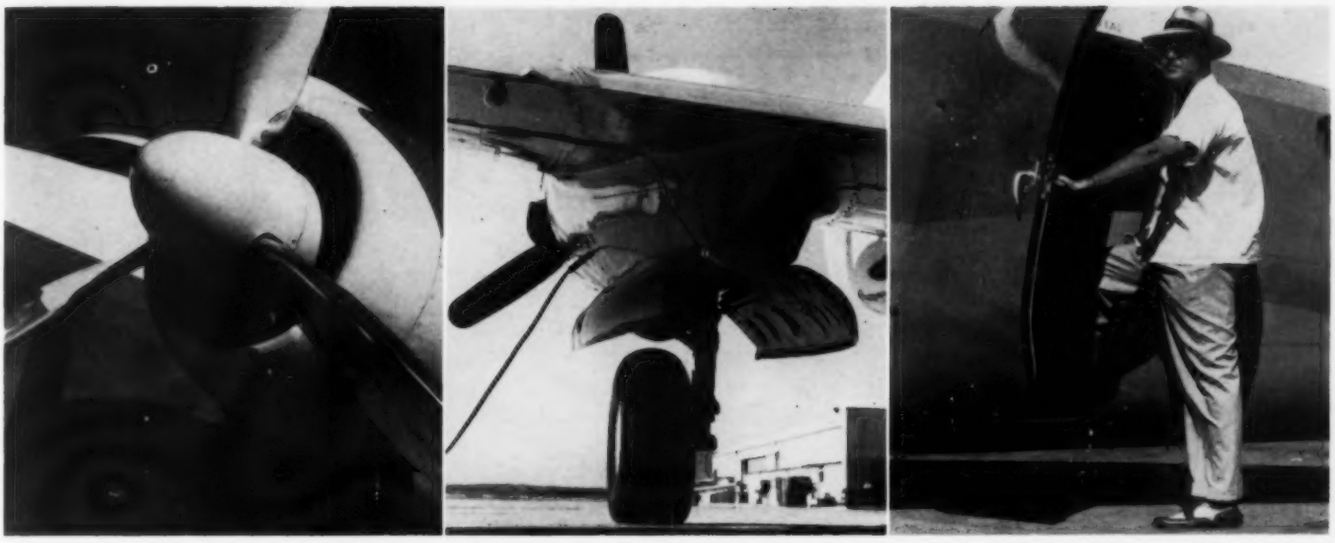
Since standard Venturas are licensed under the CAA's "limited" category, the Super Ventura is in the same category. The "limited" category applies to aircraft not for hire that have proven their airworthiness and dependability in the military service but which were not originally licensed for civilian use.

A few Venturas are now in operation as business airplanes by corporate owners. Howard Aero Service has bought all unconverted surplus military Venturas it can find — a total of 23 airplanes. It has not listed a firm price for its conversion model but $300,000 has been mentioned.

Conversion changes effected by Howard have greatly improved the airplane's original handling characteristics. Short-coupled and with 4,000 hp. for its relatively light weight, the Navy version developed heavy control forces, for example. But this has been improved considerably by the lengthening of the fuselage by 48 inches, this additional length being inserted in the cabin area just aft of the wing leading edge. Spring-loaded tabs were developed for the controls and they are described as having taken care of the airplane's high control pressures.

"Our extended fuselage has increased the airplane's directional stability and has greatly reduced single-engine rudder drag," Howard explained. "This modification alone netted an increase of over 20 mph. in single-engine performance. The M-series engines require only 52% of the cooling air formerly required by the standard engine. This, along with the new engine cowling, allows the use of

Spring-loaded tabs for boost control are shown here on a Super Ventura rudder, being examined by Dee Howard (left) and Ed Swearingen of Howard Aero Service, which developed the tabs to improve the Ventura's handling characteristics.
—(FLIGHT MAGAZINE Photo by E. H. Pickering.)



New cowling and spinner (left) help cut in half the engine cooling air drag on the Super Ventura as compared to that of the standard military Ventura. Center photo shows landing gear doors, wing trailing edge cleanup and external electrical power outlet. Large door (right) and low-to-ground floor make for easy entry to Super Ventura cabin, no step being needed.
—(FLIGHT MAGAZINE Photos by E. H. Pickering.)

full power for extended periods of time without overheating during low-speed single-engine operation. On single-engine cruise, maximum continuous power can be used indefinitely with the cowl flaps closed."

Describing the improved fuel system in the Super conversion, Howard said it will supply all the fuel on board to either engine, at any time, "regardless of fuel management." He explained: "All 1,300 gals. are contained in the one outer wing tank and two center-section tanks for each respective engine and is normally used in this order. Under other than normal conditions, the fuel from the opposite tanks may be selected for either engine without using a cross-feed system. Each engine has its respective auxiliary boost pump. But in addition, the Super Ventura is equipped with an entirely separate emergency system that goes into action at any time the carburetor fuel pressure drops to an unsafe operating limit. This system for each engine supplies fuel directly to the carburetor from the opposite respective front tank. These tanks will normally have fuel as they are reserved for take-off and landing and will be used last for cruising."

An advantage is in using all fuel from any tank without alarming the passengers — instead of the engine quitting due to loss of fuel pressure, it will continue to run on the emergency system while an amber emergency light, along with the main system flow meter, notifies the pilot to select another tank.

About half of the airplane's total fuel supply — 640 gals. — may be dumped from the outer wing tanks for high-altitude single-engine operation when necessary in an emergency.

The large cabin is fitted with a large door, modified from the Lodestar cargo door, and is easy to enter or leave because the floor of the cabin at the door is within a few inches of the ground. The cockpit has been made very large and roomy by the removal of the original bulkhead. Four seats, instead of two, are in the enlarged cockpit. Two behind the crew are "observation" seats for passengers, who are seated higher than the crew and have visibility forward through a single-piece, curved, bird-proof windshield. Large picture windows are used throughout the airplane.

A great amount of the original airplane's vibration and cabin noise have been eliminated by soundproofing and by the installation of a unique, solid and heavy-gauge metal bulkhead in the nose forward of the cockpit. This bulkhead is located in the propeller arc and prevents fuselage sides from vibrating and thus transferring this vibration to the rest of the airplane.

One of the Super Ventura's most interesting features is its almost complete use of flush-mounted or concealed antennas. ★ ★ ★

Nose contains dual pitot tubes, cabin and heater air intakes and taxi lights. DC-6-type jet exhaust stack is used on engines. Super Ventura has one-piece bird-proof windshield, which is curved.
—(FLIGHT MAGAZINE Photo by E. H. Pickering.)

Tufts photographed in flight show how augmentor (top) smoothed out turbulence at wing leading edge, with standard exhaust stack arrangement in lower photo.

Dove engines are in-line 6-cylinder Gipsy Queens. In this view, new exhaust tube is shown slightly below inboard side of nacelle. It replaces muff-type DH exhaust restrictor and cuts back pressure in half.

Exhaust Augmentors for Dove Speed

MORE cruising speed and improved engine operation are claimed for an interesting new exhaust augmentor system for the de Havilland Dove. It was perfected in a joint project by the Dallas branch of Butler Airplane Sales, distributor for Doves, and Dallas Aero Service, authorized de Havilland parts, repair and maintenance base for Doves.

In speed, the effect of the new system is a gain of 8 to 16 mph., giving the popular Dove a cruising speed of more than 200 mph.

"What we get out of the installation is the equivalent of an additional 3 or 4 inches of manifold pressure at 8,000 ft., and that means a lot," commented Ira Hartzog, Dallas manager for Butler, and Tom Lombardo, engineering sales manager for Dallas Aero Service.

The installation is for Doves powered with the de Havilland Mark 2 Gipsy Queen engines, which are rated at 385 hp. each. Hartzog and Lombardo are convinced after many flight checks that the new system pays off. They are so sure, in fact, that they are offering the installation on a "no speed-no pay" basis.

"We will install it on one engine of a prospect's Dove and if it doesn't add appreciably to his cruising speed, we remove it and he doesn't pay a thing but the actual labor charges involved, which are less than $100," they said. "But if it adds speed on one engine, he buys it; we go ahead and install it on the other engine. The installed price is only $2,780 for a complete, turn-key job."

The exhaust augmentor installation not only gives the Dove additional speed, but does it at no expense in horsepower, engine temperatures, back pressure or weight. In these terms, it is actually "something for nothing," for it has additional advantages.

"Exhaust back pressure is reduced by about 50%, or half," Lombardo said. "The Dove's engines have exceptionally high back pressures in the standard installation, ranging from 5.8 to 8 ins. hg. per cylinder. But with our augmentor installation, these are reduced to 3 to 5.6 inches hg. per cylinder."

He said cylinder temperatures had been carefully calibrated in obtaining CAA approval. As it turned out, better cooling was achieved. These tests were conducted at maximum single-engine power with 42 inches of manifold pressure and 2,700 rpm. in climbs at 105 mph.

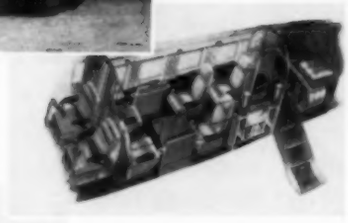
As for weight, the augmentor installation actually weighs about 10

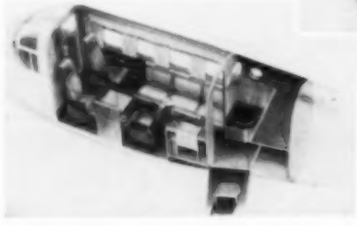
(Continued on page 39)

Three views of the new augmentor exhaust system on the Dove. At left, long fairing for tube is seen from the front. View from rear is shown at center. At right, tube is seen from the side. Expanding cooling air from nacelle and exhaust gases create pumping action in tube for better cooling. —(Dallas Aero Service Photos.)

The *NOSE* that gets into other peoples *BUSINESS*

the Super 18 Beechcraft





A wide variety of exterior color schemes and interior cabin arrangements are available for your choice.

This beautiful nose belongs to one of the proudest ladies of the airways — the new MODEL E18S Beechcraft Executive Transport. In addition to her beauty and slim lines, she can justly be proud of her ability to help her "man" accomplish his objectives in the competitive business world of today — by consistently putting her nose into other people's business circles **where good accounts and contracts are in the making** miles from home base.

Distant plants — distant branch operations — distant markets — are only hours away, instead of days, in a company owned Beechcraft Super 18. This new business-airliner provides a cruising speed of 215 mph.; top speed of 234 mph.; range of 1,455 miles; carries eight people in a big luxurious cabin with greater comfort and extra walk-around roominess.

The J. D. Reed Company of Houston, Texas, upon your request, will be happy to make a survey of your company's particular air transportation requirements to determine the most effective and economical solution to your needs. We have been able to reduce transportation time as much as 75% for many of our Beechcraft customers. Requesting such a survey and demonstration of Beechcraft models costs you nothing, but it may prove to be the wisest decision of your business career. Also, you will always find the J. D. Reed Company a good place to do business for any aviation requirement.

J.D. REED CO. INC.
SALES SERVICE
Beechcraft
MUNICIPAL AIRPORT
HOUSTON, TEXAS

Speed for Supremacy

The immediate challenge . . . facing business leaders in every field . . . is the urgent need for expansion and modernization to maintain facilities that will be large enough and strong enough for survival in the race for industrial supremacy.

Yesterday's facilities . . . yesterday's methods of operation are outmoded unless they are adapted to the challenge of today's business competition.

In the race to capture new markets with new products and new services, business faces a line of action extending hundreds or thousands of miles from the home office. Distant plants, distant developments, far-flung interests of every sort . . . all demand the attention of executives for on-the-spot decisions.

Beechcrafts have helped thousands of expanding businesses meet the challenge of competition and of growth. Cruising at 200 miles per hour, with a range up to 1100 miles, the Beechcraft Twin-Bonanza flies *faster* and flies *farther* than any other plane in the six-place class! Hundreds of business-owned Twin-Bonanzas prove — The World Is Small When You Fly A BEECHCRAFT.

★ASK ABOUT BEECHCRAFT'S NEW EXCLUSIVE LEASING PLAN.

Beech Aircraft Corporation,
Wichita, Kansas, U. S. A.

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Qualified Service makes the FINEST *product* FINER

The Beechcraft owner can well take pride in the fact that he owns and flies one of the finest products of the Aviation Industry. He also has at his disposal the finest national service organization that is qualified by the Beechcraft factory to maintain all Beechcraft models in factory new condition.

At Certified Beechcraft Service Stations you will find skilled and efficient Beechcraft factory trained personnel, adequate equipment and facilities, factory authorized parts and accessories plus economical prices. Certified Beechcraft Service is an additional bonus you receive when you purchase a Beechcraft.

AIRCRAFTCO, INC.
New Municipal Airport
Wichita, Kansas

AIRCRAFTSMEN, INC.
Will Rogers Field
Oklahoma City, Oklahoma

ALAMO AVIATION, INC.
Municipal Airport
San Antonio, Texas

ANDERSON AIR ACTIVITIES
General Mitchell Field, Milwaukee, Wisc.
Truax Field, Madison, Wisc.

ATLANTIC AVIATON CORP.
Teterboro Airport, (25 minutes from Times Square)
Teterboro, New Jersey
Logan Airport, East Boston, Mass.

ATLANTIC AVIATION SERVICE
New Castle County Airport, Wilmington, Delaware

BUTLER CO., AVIATION DIVISION
Municipal Airport, Chicago, Ill.

CURREY SANDERS AIRCRAFT CO., INC.
Downtown Municipal Airport, Shreveport, La.

CUTTER-CARR FLYING SERVICE, INC.
West Mesa Airport, Albuquerque, New Mexico

GRAY AIRCRAFT SVC. CO., INC.
D. A. Cody, Service Mgr.
Love Field, Dallas, Texas

ELLIOTT FLYING SERVICE
Municipal Airport, Davenport, Iowa

ROD MORE AVIATION SERVICES
Cuddihy Field, P. O. Box 556,
Corpus Christi, Texas

ROSCOE TURNER AERONAUTICAL CORP.
Municipal Airport, Indianapolis, Ind.

J. D. REED CO., INC.
Municipal Airport, Houston, Texas

TOPEKA AIRCRAFT SALES & SERVICE
Municipal Airport, Topeka, Kansas

TRADEWIND AIRPORT CORP.
Tradewind Airport, Amarillo, Texas

TULSAIR DISTRIBUTORS, INC.
Hangar 8, Municipal Airport, Tulsa, Oklahoma

WINGS, INCORPORATED
Wings Field, Ambler, Pennsylvania
Philadelphia International Airport, Philadelphia, Pa.

To obtain the best service for your Beechcraft visit the Certified Beechcraft Service Stations listed.

Clean lines of the M-S 760 are emphasized in this flight view from underneath. Wing area is 194 sq. ft. Marbore jet engines are installed side by side in the fuselage near wing trailing edge. Very little yaw results when one engine is shut down.
—(Beech Photo.)

BEECH JET JUNKET

(Continued from page 21)

good that signals come in from widely separated transmitters to confuse the pilot. Radio markers overlap.

It all adds up to the fact that the M-S 760 marks the start, or the promise, of a new so-called "jet age" for business flying and that attendant problems will have to be solved as public use and familiarity expand.

"Capable of keeping right alongside the fastest airliners of today at their operating levels, I believe this airplane is the real prototype of its age — the jet age for executive aircraft," commented W. R. Richards of Atlantic Aviation, New York distributor for Beech, following his 25-minute flight in the M-S 760. "Others agree with me. For example, an airline captain remarked as follows: 'After flying in the M-S 760, I am convinced it is in first place; its flight characteristics are excellent.' An authority on military jet design told me: 'The M-S 760 represents the most practical application of jet power I've ever seen.' As a Beech distributor, I believe we have another great airplane to offer the corporate executives who are interested in going places at 350 to 400 mph."

Such discussion is the reason why Beech officials arranged to demonstrate the French jet in this country — plus the possibility of interesting the Navy in the design. Without investing heavily in a lengthy prototype development, the Beech organization can sample opinion in the field and then decide accordingly whether to take on the French development, initiate a project of its own — or postpone any commercial jet activity indefinitely. In the process, Beech distributors and their customers and prospects are given an opportunity to try a 4-place twin-jet themselves for first-hand acquaintance with the opportunities and problems involved.

The M-S 760's facts and figures include the following data from Beech:

Power Plants: Two Turbomeca Marbore 2 turbojets, each rated at 880 lbs. of thrust at 22,700 rpm. maximum.

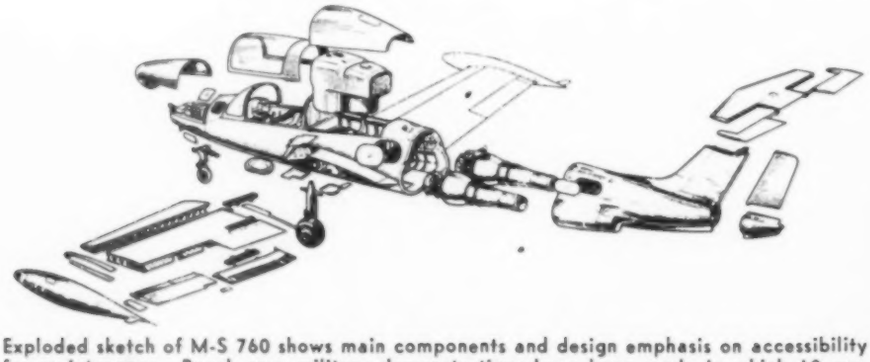
Weights: Empty, 4,325 lbs.; oil and fuel (360 gals. of fuel), 2,350 lbs.; allowance for 4 persons and baggage, 805 lbs.; gross weight, 7,480 lbs.

Performance: Top speed, 410 mph.; cruising speed and range (at 21,000 rpm. normal power with climb and letdown allowances but no reserve), 550-mile range at sea level and 355 mph., 710-mile range at 10,000 ft. and 360 mph., and 915 mile-range at 20,000 ft. and 355 mph.

For the New York unveiling, a large Beech official delegation was on hand from the Wichita factory. They included O. A. Beech, president; Jack Gaty, general manager; Leddy Greever, commercial sales manager; Guy Miller, Allen Raines, Henry Brower and Wally Balzerick, all from the sales department; M. G. Neuberger, export sales manager; Dell Spillman, customer service department; Warren Filer, flight department; Miss L. Winters, assistant secretary; Mrs. E. G. Hayes of Mrs. Beech's office, and Phil McKnight and Jim Yarnell of public relations.

From the Morane-Saulnier factory in France were Serge Saulnier; Pilot Jean Cliquet; Flight Engineer Reiny Raymond; Jet Engine Mechanic Rene Mercy; Airframe Mechanic Andre Montic and Electrical Mechanic Gilbert Villote.

The Beech unveiling in New York drew about 100 persons on June 14 and more than 200 two days later for Mrs. Beech's special open house celebration. ★ ★ ★



Exploded sketch of M-S 760 shows main components and design emphasis on accessibility for maintenance. Beech says military demonstrations have been made in which 10 mechanics completely disassembled the airplane, with all removable components such as engines, tanks, radio and the like removed, in only 20 mins. All items were replaced in only 40 mins. In 15 mins. more, the airplane was subjected to a full course of aerobatics in flight.

Among first Beech distributors to fly the M-S 760 was J. D. Reed of Houston, who went to New York for the start of the Beech tour. Reed said he sees a definite place on the business plane market for the M-S 760.
—(Beech Photo.)

Specializing in BEAUTIFUL Beechcraft INTERIORS

FROM 100 HRS. TO THE NEXT
GRAY AIRCRAFT SERVICE at DALLAS
SAFE. DEPENDABLE SERVICE

for...
SAFE
DEPENDABLE
FLIGHT

Pardon our pride, but one of our Custom Interiors for a Twin Beech has won the blue ribbon for being tops of everything in its class.

Among 300 business planes gathered last month at Reading Aviation Service in Reading, Pennsylvania, the judges selected Beech D18S N-80048 as having the best interior among multi-engine aircraft under 12,000 lbs. gross. When they asked who did the prize-winning interior, Captain Charles Sowa, chief pilot for Virginia Coal & Iron Co., Philadelphia, told them about us – Gray Aircraft Service.

We specialize in Beechcraft work and our winning ways are known from coast to coast for any kind of work on Beechcrafts – interiors, exteriors, instrumentation, radio and electronics, autopilots, airframe modifications – anything for a Beech.

If you're proud of your Beechcraft, you'll always be happy with the craftsmanship of our specialists. We're tops in our class, as the Reading Aviation Service Award proves, and we'll be mighty proud to do your Beech work.

DISTRIBUTORSHIPS

GOODYEAR LYCOMING
CONTINENTAL LEAR

DEALERSHIPS

BENDIX NARCO ARC

D.A. Cody Mgr.
EL-3245
Irving 2-1265

CERTIFIED BEECHCRAFT SALES SERVICE

Gray Aircraft Service Co., Inc.

LOVE FIELD DALLAS

Best Interior for Twins, C. Sowa, Pilot (left), Virginia Coal & Iron

Best Exterior and Best of Class for Twins, P. Van Treuren, Pilot, Dairypak

Best Equipped Twin, Dick Dower, Pilot, Precision Castings

Best Equipment Presentation, Single-Engine, R. Jarecki, Pilot, American Sterilizer

The First Blue Ribbons

FOR six years, Sime Bertolet's Reading Aviation Service at Reading, Pennsylvania, has successfully promoted better standards for maintenance, equipment and operations among business fliers. This year, he added a new and effective twist to his annual project — prizes and awards to business planes judged the best in single-engine, light twin-engine and larger multi-engine categories.

Tops in the judging, and therefore winner of awards distinguishing it as "flagship of the industrial air fleet for 1955," was a DC-3 owned by Sun Oil Company and based at Philadelphia, with Raymond Higgins as chief pilot. It was judged as having the best exterior and as being the best of the class among multi-engine aircraft grossing over 12,000 lbs. In this same class, awards went to a DC-3 owned by Davis Chemical Co., Baltimore, with E. F. McFee as chief pilot, for the best interior and to a B-23 owned by Pittsburgh Consolidation Coal Co., Louis Ramey, chief pilot, for having the best equipment and presentation.

In the multi-engine class under 12,000 lbs. gross, winners were as follows: Best Exterior and Best of Class — Beech D18S, Dairypak, Inc., Cleveland, Philip Van Treuren, chief pilot; Best Interior — Beech D18S, Virginia Coal & Iron Co., Philadelphia, Charles Sowa, chief pilot; Best Equipment and Presentation — de Havilland Dove, Precision Castings, Inc., Syracuse, N. Y., Richard Dower, chief pilot.

In the single-engine class, winners were as follows: Best of Class — Beech Bonanza, Character Foundations, Inc., New York City, Herman Kress, owner-pilot; Best Exterior — Ercoupe, France Packing Co., Philadelphia, E. A. France, owner-pilot; Best Interior — Navion, H. V. Beronius, Jr., Detroit, owner-pilot; Best Equipment and Presentation — Beech Bonanza, Russell C. Jarecki, Erie, Pa., owner-pilot.

FLIGHT MAGAZINE sees in the success of this form of emphasis on higher standards of excellence in business flying equipment a significant contribution to development. It not only encourages better dependability and safety in executive air transportation but

(Continued on page 34)

"Flagship of the Industrial Air Fleet for 1955" is the distinction given to the DC-3 at left, owned by Sun Oil Co., and flown by Ray Higgins. It was judged best of multi-engine class over 12,000 lbs. gross and had winning exterior. At lower left is Davison Chemical DC-3, picked as having best interior among large twins. Pilot is E. F. McFee. The B-23 below won top award for best equipment and presentation among large twins. It is owned by Pittsburgh Consolidation Coal, with Louis Ramey as pilot.

—(Reading Aviation Service Photos.)

The new Mooney Mark 20 is out . . . !

This astonishing new plane flies circles around anything else in its class.

Powered by the dependable 150 h.p. Lycoming, the Mooney Mark 20 cruises 165 m.p.h., ranges 900-miles-plus . . . seats four people with room to spare, carries an extra 120 lbs. in the baggage compartment.

And it's priced at only $12,500 complete with all standard equipment.

Since more and more of these new Mooneys come rolling off the assembly line every day, you can probably see it now at your nearest distributor.

Caution: you're going to like this airplane.

Be prepared to *want* one.

MOONEY
mark
20

mooney aircraft inc. KERRVILLE, TEXAS

see your distributor now . . .

Amityville Flying Service, Zahm Airport, L. I., N. Y. • *Falls Church Airpark Co., Inc.*, Falls Church, Va.
Clay Greening, Laurel, Mont. • *Hedges, Inc.*, San Antonio, Tex. • *J. A. Hudson*, Dallas, Tex.
Kunau Aviation Co., Chicago Hammond Airport, Chicago, Ill. • *Northwest Flying Service*, Boise, Idaho
Van's Air Service Inc., St. Cloud, Minn. • *Vest Aircraft Co.*, Denver, Colo.
West Texas Flying Service, Midland, Tex. • *Frank Ogden*, Toronto, Canada
Airway Flight Service, Inc., Kansas City, Missouri • *Fleet Planes, Inc.*, Panama City, Florida
Garden City Aero, San Jose, Calif. • *Hill's Flying Service*, Sacramento, Calif.
Kerrville Flying Service, Kerrville, Tex.

Service Designed For Business Flying

Cessna aircraft owners fly more hours per month and cover more miles of territory per hour than ever before — because their Cessnas were designed for service efficiency in the air and on the ground.

Business fliers stay on the go more by depending on our Authorized Cessna Service to keep their aircraft always ready for reliability, performance and comfort. We know their needs best because our factory-approved facilities and staffs specialize in factory methods, equipment and accessories.

Get the most out of your Cessna by taking advantage of the three important service features guaranteed by our factory-supervised Cessna Flat Rate Program:

1. You get an accurately quoted price and time-required quotation based on hundreds of job studies covering virtually all maintenance needs.

2. You get genuine Cessna parts and factory-trained workmanship.

3. You save money and time and we stand behind every job for your fullest satisfaction.

To make the most of your Cessna's usefulness, visit the Authorized Cessna Service Stations listed below.

These progressive Cessna Authorized Service Shops offer flat-rate service.

Aircraft Sales Company
Meacham Field
Fort Worth, Texas

Champ's Aviation, Inc.
Municipal Airport
El Paso and Lubbock, Texas

Clinton Aviation Company
Stapleton Airfield
Denver, Colorado

Cruse Aviation, Inc.
Municipal Airport
Houston, Texas

Dal-Tex Aviation, Inc.
Highland Park Airport and Love Field
Dallas, Texas

Hair Flying Service
Harding Field
Baton Rouge, Louisiana

Howard Aero Service, Inc.
San Antonio International Airport
San Antonio, Texas

Poelman Aircraft Co.
New Orleans Airport
New Orleans, Louisiana

Ragsdale Flying Service
Municipal Airport
Austin, Texas

Kenneth Starnes Aviation Service
Adams Field; Little Rock, Arkansas

Southwestern Skyways, Inc.
New Municipal Airport
Santa Fe, New Mexico

Sunny South Aircraft Service, Inc.
Broward International Airport
Fort Lauderdale, Florida

Yingling Aircraft, Inc.
Municipal Airport
Wichita, Kansas

❶ An engine that offers same horsepower at lower rpm's ❷ relocated ventilator intakes ❸ new ¼-inch windshield add up to...

Amazing cabin quietness in the new Cessna 180

In the new "hushed" comfort of the quiet 180 cabin, passengers may relax and talk freely, pilot stays fresher, more alert. Improved, quieter engine delivers same hp. with 100 less rpm's; thicker (¼-inch) windshield and ventilator location a full 8 inches farther from propeller noise create the most comfortable cabin quietness in 180 history.

Other great Cessna 180 features include constant speed, all-metal propeller; jet type "adjustable" stabilizer to reduce drag, make "trimming out" easier; exclusive "Para-Lift" flaps for shorter take-offs, landings.

In a class by itself. Nowhere else so much airplane at anywhere near the price. Only $12,950 f.o.b. Wichita, Kansas.

Cessna®

Big Cabin Comfort

Two wide (36 in.) cabin doors allow easy entrance and exit, expedite cargo loading. Individual, adjustable, form-fitting front seats are an exclusive feature of the new 4-place Cessna 180.

You can easily reach the roomy 120-lb. luggage compartment from inside of cabin. Complete air-circulation from large heating-ventilating system. See nearest Cessna dealer listed in yellow pages of phone book or write CESSNA AIRCRAFT CO., DEPT. FM-7, WICHITA, KANSAS.

CESSNA 170 180 195 310 THE COMPLETE AIR FLEET FOR EVERY BUSINESS NEED!

THE FIRST BLUE RIBBONS

(Continued from page 30)

furnishes recognition for those business firms and individuals who use aircraft and devote their best efforts to obtaining the finest possible service from their flying activities.

Reading Air Service is the first operator to sponsor a competition where deserved honors are bestowed upon outstanding business planes.

Nationwide Competition

In doing this, RAS focuses attention on all fixed-base operations and shops which performed the work responsible for winning distinction. This has the effect of making the competition nation wide, rather than local. To get a better picture of this, FLIGHT MAGAZINE invited winners of RAS awards to name those whose work helped them cop the prizes. Information they furnished is as follows:

SUN OIL COMPANY DC-3: A Remmert-Werner conversion, with Pilot Ray Higgins' own crew performing all maintenance except engine changes and 1,000-hr. checks. Painting by L. B. Smith, Miami. VIRGINIA COAL & IRON TWIN BEECH: Winning interior by Gray Aircraft Service, Dallas. DAIRYPAK TWIN BEECH: Spartan at Tulsa did interior and paint job, with Pilot Philip Van Trueren and his crew completing instrumentation, radio and electronics installation. PRECISION CASTINGS DE HAVILLAND DOVE: Reading Aviation Service and Atlantic Aviation performed work. PITTSBURGH CONSOLIDATION COAL B-23: AiResearch Aviation Service and Qualitron, both of Los Angeles, praised for work. CHARACTER FOUNDATIONS BEECH BONANZA: Work performed by International Aviation Industries, White Plains, N. Y., under Lee Weems. FRANCE PACKING COMPANY ERCOUPE: Credit for fine work given to Fritz Bachman, Kutztown (Pa.) Aviation Service. H. V. BERONIUS NAVION work was done by various individuals and the owner, he reported. RUSSELL C. JARECKI BONANZA represents work of Hangar Service, Inc., Muskegon (engine changes), Ohio Aviation, Vandalia (propeller) and Walter Cowley of Erie and Ray Clemmens of Aircraft Service, Cleveland (radio).

A comprehensive point system of judging determined the award winners. Originality, quality, suitability, cleanliness, comfort, safety provisions and improvements and refinements to original airplane were important factors.

★ ★ ★

ALL BIRD — NO FEATHERS

(Continued from page 17)

825 miles and an endurance of 4 hrs. with its present fuel capacity of 102 gals. when operated normally — anything over 4 hrs. I don't care to be on base leg; I want to be in the hangar. Let me repeat that this refers to what I call normal operation — cruising at 8,000 to 10,000 ft. at a true air speed of 205-210 mph. I suggest great caution should be exercised in instrument weather where the destination is in excess of 3 hrs. away and weather there and in surrounding area is instrument and questionable. Under these conditions, with its present gas capacity, there is no such thing as a reserve. So don't count on it.

However, at altitude the range can be increased to about a thousand miles. The 310 performs nicely at 16,000 to 17,000 ft. and trues out at about 185 mph. As an example, at 16,500 indicated and with 3 people, she indicates 150 mph. at 2,300 rpm. and 15 ins. of manifold pressure (that's all she wrote when you're at 16,500). Just think what she would do if we could put

fly the AIRMAN'S AIRLINE

to 52 cities inside U.S.A. and eight Latin American countries

Braniff flies the heart of the hemisphere, with superb equipment and an on-time performance record particularly appreciated by men in the aviation business. And Braniff's friendly service is famous on two continents. It's attention that makes you feel like a VIP. You'll enjoy it on Braniff's fast, frequent DC-6 and Super Convair flights up and down Mid-America — and on El Conquistador, the celebrated DC-6 sleeper that flies Braniff's straight-line route to South America. Make your next trip by Braniff.

BRANIFF International AIRWAYS

Love Field • Dallas, Texas

blowers on the engines! It is my personal opinion that the airplane would true approximately 275 mph. if we could get 22 inches of manifold pressure at that altitude! That would really be going.

If you are interested in small field performance, as I have to be because there's no telling where I may find myself in my business, which is insurance, you will be interested in the following example: A few months ago, I took off from Fresnillo, Mexico. The air strip there is at an elevation of about 7,200 ft. above sea level. It is not too well maintained — the strip is about 4,500 ft. long and is made of crushed rock and dirt. It was 2 p. m. and the sun was beating down out of a clear sky with the outside temperature on the high side at 105 degrees F. To make matters even worse, there was no wind — not even a breeze. I had two-thirds of a gas load and two passengers, with average baggage. To be truthful, I was somewhat concerned about the conditions and it wasn't an exactly happy thought when I remembered that I was using Mexican 80-octane gas instead of the required 91. But I respect my 310 and opened the throttles anyway. I intended to pop flaps after I got rolling. But with acceleration which boots you like that of the 310, I soon saw I needed no flaps. The little gal was airborne in less than 3,000 ft. of roll. Without getting flowery, I will simply say that I consider this kind of per-

— and another new

SUPER-92 DC-3

N42F—ready in July

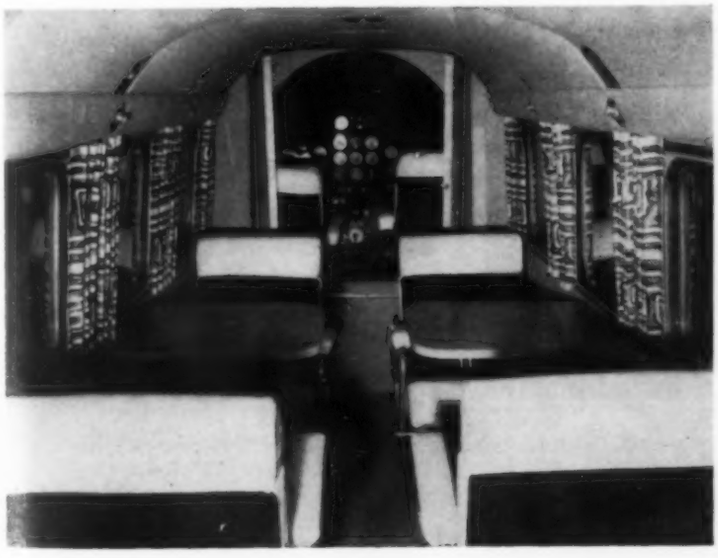
Super-92 engines, Collins or Bendix radio, new ship guarantee, complete 8000 hour overhaul, beautiful custom interior, big windows, 200 mph.

Custom 18

Conversion

ready in July . . .

write for specifications



Your own present Model 18 may easily have this new design for comfort and relaxation. While conversion is in progress on your plane, you may also have, according to your own desires, complete overhaul for airframe, engines, tanks, surfaces, wings, electronics, radios, and other components.

- big, easy vision windows
- special, reclining chairs
- adjustable headrests
- spacious interior
- roomy cockpit
- open design
- clean, modern lines
- bright, restful decor

Write for an estimate today, and see what a little imagination and experience can do for your air travel comfort.

REMMERT-WERNER, Inc.

PErshing 1-2260 Lambert Field St. Louis, Missouri

formance no less than remarkable.

Incidentally, I have always taken a dim view of the use of flaps on take-off with twin-engine airplanes — unless it is an absolute necessity. You may probably find a great bit of argument as to my opinion in this matter, but I think the faster the ship attains its single-engine safety speed, the longer the pilot's longevity is going to be.

I also feel strongly about something else. Every pilot being checked out in the airplane should be told about one characteristic of the 310. After taking off, as your gear starts to retract, the airplane has a definite sink — due to the opening of the landing-gear doors. This could be "interesting," shall we say, especially during night take-off, to fellows like myself who always like to get the gear tucked away in a hurry so we can keep the airplane flat until V-1 is passed. The factory manual stresses that, for short-field take-offs with an obstacle to clear, the gear should not be retracted until the obstacle has been cleared. But I still think it should be stressed to each person as he is being checked out in the airplane — some day they'll get another dumb character like yours truly who can't read too well.

The Cessna 310's single-engine performance is the piece de resistance. The proof is in the pudding, as they say. Here's what happened to me: Larry Hunt, the Cessna distributor in my area, brought a 310 over to let me fly it. Now no one lately has called either of us exactly slender, so we added two more portly persons for the back seat (the 310 is licensed for 5 but is really luxurious for 4), took off, climbed to 8,000 and leveled off. With 2,300 rpm. and 22 inches of manifold pressure and 185 mph., we feathered Number 2 and increased the rpm. to 2,450 on Number 1. The speed got down to 135 indicated and stayed there while we held 8,000.

Remember the old saying for engine failure in a twin? It goes like this: "Your foot's on the good engine, press the red button on the other side." Well, you can just forget it in the 310. You can leave your feet on the floor and just dip your wing slightly into your good engine and you'll go tooling along.

After holding 135 indicated at 8,000, we climbed to 10,000 and held her, indicating a hair over 120. She huffed and puffed that last thousand to be sure. But she made it like a little thoroughbred. Out here where the rock piles meet the Pacific, you may very well need that 10,000 ft. sometime. If you're in a 310, you'll have it made. Take it from us, the 310 is all bird — and no feathers. ★ ★ ★

YOUR BEST BET
in HOUSTON
Smiling Service for the Plane
and we Pamper the PILOT, too
CITY
OF
HOUSTON
San Jacinto
Monument
Biggest Shaft in Texas
ANDRAU RADIO
269 AAP
ANDRAU AIR PARK
at Alief, Texas — 15 Miles Due West of Downtown Houston
TRANSPORTATION ALWAYS AVAILABLE
Bob
Welcomes
You
Stop in and See us on Your Next Trip
• Hangar and tie-down space available
• Transportation available to Houston and Shamrock Hotel
• 80-91 octane gasoline
• Unicom
• Coffee Shop
• 22 miles on 283-degree track from Houston LF range
• Low frequency homing beacon 269 Ky AAP
• Runways: hard surfaced, lighted, and rotating beacon, 3450 feet
• 24 hour operation
Congratulations to Johnny Williams, Melrose Hotel, Dallas, for his splashy new Swimming Pool for Pilots.

MOONEY MARK 20

(Continued from page 19)

150-hp. engine a fuel consumption of 9.25 gph. at 170 mph. and 7.46 gph. at 150 mph. The 150 mph. cruising speed is available on 60% of power at 7,000 ft., using 2,300 rpm. and 20.5 ins. manifold pressure.

Key to the airplane's efficiency and high performance is its clean design by Al Mooney, chief engineer. He not only uses a laminar-flow airfoil section for the wing, but has held frontal area down to a minimum and has kept the airplane's over-all lines exceptionally clean.

One of the Mark 20's major features is its manual retraction and extension of landing gear and flaps — a feature which will eliminate costly maintenance because it completely eliminates hydraulics and electric motors and their associated paraphernalia. Manual operation also gives the pilot absolute assurance of gear position at all times — the wheels are wherever the gear-operating lever is because they are rigidly connected with it.

W. W. (Bill) Taylor, chief test pilot, has demonstrated to distributors another feature of the airplane. At high speeds, the controls become noticeably heavier than at approach speeds, where they are desirably soft. This was designed into the control system and, for one thing, is a deterrent to over-controlling at high speeds where abrupt forces are not desired.

Cleanness of the design is demonstrated when the gear is lowered as on an approach for a landing. The airplane decelerates immediately when the gear is extended, its effect being to "dirty" the aerodynamic configuration. If anyone should ever want to prevent the Mark 20 from accelerating — as in the case of letdown through a turbulent overcast — the extension of the gear would do the job more effectively than on many airplane designs. Three-position flaps are a further aid for getting in and out of short fields.

There are no trim tabs on the Mark 20. Instead, a single control trims the entire tail assembly — vertical fin and horizontal stabilizer. This makes for increased aerodynamic efficiency in all attitudes.

Remarkably easy to fly because of its many simplified features, the Mark 20 has a 50-mph. stall speed and its tricycle gear, with steerable nosewheel, provides easy handling on the ground in a cross-wind. It has a 950-fpm. rate of climb and its long-span wing makes it a good airplane for altitude.

At the advertised $12,500 price, the

IT COSTS LESS TO FLY

WITH CONTINENTAL POWER

Continental's continuing interest in its product, after the sale, makes a big reduction in the cost of plane ownership and use. Continental aircraft engines are not only built to absorb their full share of punishment, but backed with the kind of service that keeps them running year after year. When major overhaul time rolls round, the owner can replace his engine with a factory-remanufactured power plant—back to zero hours, and with factory new engine guarantee—at very low fixed cost and with virtually no dead time. Continental's Factory Remanufacturing Plan is one more in a long list of reasons underlying pilot preference for planes with Continental power.

• • •

PARTNERS IN MAKING PRIVATE FLYING THE SAFEST MEANS OF TRAVEL

1905 S.A.E. GOLDEN ANNIVERSARY 1955

Continental Motors Corporation
Aircraft Engine Division
MUSKEGON, MICHIGAN

a narco Sapphire

PRODUCT

Range knob changes scale to 0-20 miles

DME

DISTANCE MEASURING EQUIPMENT

SO USEFUL, SO NECESSARY

- Gives exact continuous distance from VOR/DME or ILS/DME stations
- Permits more direct instrument let-downs
- Gives more accurate ETA's
- Checks ground speed and winds aloft
- So useful in hundreds of ways for safer, easier, more economical IFR and VFR operations

YOU need DME

You'll want Narco DME because

- It's crystal-controlled
- Lightest in weight (only 32 pounds complete)
- Requires least power
- Uses ruggedized ARINC tubes
- Carries unrestricted CAA Type Certificate
- Backed by a nation-wide factory-trained service network
- 0-20 mile scale gives extremely accurate readings for final approach operations or orbiting

See your nearest distributor or send for brochure describing the Narco DME.

narco

NATIONAL AERONAUTICAL CORPORATION

AMBLER, PA.

Mark 20 includes as standard equipment a constant-speed, controllable Hartzell metal propeller and spinner; Narco Superhomer VHF transceiver and omni; electric turn and bank; sensitive altimeter; manifold pressure gauge; cylinder-head temperature gauge; cabin heater; instrument lights; electric auxiliary fuel pump; navigation lights; landing light; 12-volt generator, battery and electrical system; dual controls; hydraulic toe brakes; cabin loudspeaker and other usually standard equipment.

The Mark 20 is of composite construction, with a metal-covered, tubular-steel fuselage and with wing and empennage of pressure-bonded aircraft spruce which is treated and sealed for life.

Distributors for the Mooney Mark 20 and Mite have been listed by the factory as follows: NEW YORK—Amityville Flying Service, Long Island; VIRGINIA—Falls Church Airpark Co., Falls Church; MONTANA—Clay Greening, Laurel; TEXAS—Hedges, Inc., of San Antonio, J. A. Hudson of Dallas, West Texas Flying Service of Midland, Kerrville Flying Service of Kerrville; ILLINOIS—Kunau Aviation, Chicago-Hammond Airport; IDAHO—Northwest Flying Service, Boise; MINNESOTA—Van's Air Service, St. Cloud; COLORADO—Vest Aircraft, Denver; MISSOURI—Airway Flight Service, Kansas City; FLORIDA—Fleet Planes, Inc., Panama City; CALIFORNIA—Garden City Aero of San Jose and Hill's Flying Service of Sacramento, and CANADA—Frank Ogden, Toronto.

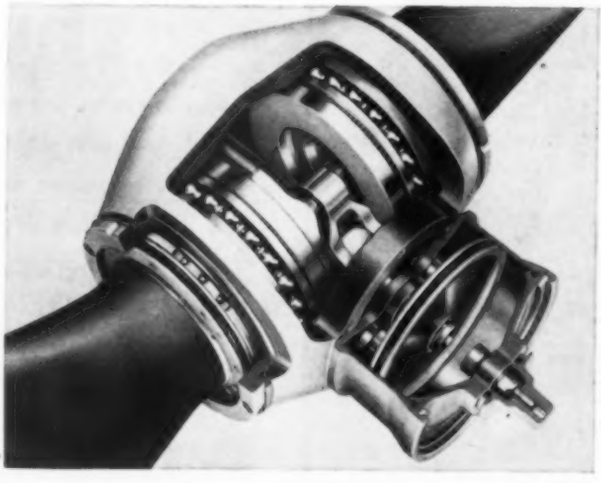
Relative size of augmentor tube for Dove installation is seen here as it is examined by Ira Hartzog (left), Dallas sales manager for Butler Airplane Sales, and Tom Lombardo, engineering-sales manager for Dallas Aero Service.

★ ★ ★

Just like a fine watch!

New constant-speed **Met-L-Matic** propeller by **McCauley**

Hub is a completely self-contained unit—precision-engineered with watchmaker's accuracy for smooth, surge-free control. Built rugged for long top-flight service at lowest service cost!



MET-L-MATIC FORGED STRENGTH

• You fly with CONFIDENCE behind a Met-L-Matic propeller.

McCAULEY INDUSTRIAL CORPORATION 1840 HOWELL AVE. DAYTON 7, OHIO

"World's largest maker of metal propellers for personal and business aircraft . . . more than 40,000 Met-L-Props, and now the new Met-L-Matic."

Here is part of a large inventory of de Havilland parts maintained for Dove owners at Dallas Aero Service, where the British manufacturer also bases two service representatives. The first 4-engine executive DH Heron in the U. S. was overhauled at Dallas Aero Service in July.

DOVE AUGMENTORS

(Continued from page 24)

pounds less than the standard exhaust stack system on the Dove.

The effect on speed is achieved through the new augmentor system's reduction in drag over that of the standard installation. In fact, the modification project had its inception as a drag reduction undertaking. In extensive flight checks, a Dove was equipped with tufts and photographed in flight, both from its own cabin and from a "chase" Dove. Still and motion pictures were studied. The area of greatest promise for drag reduction was around the standard exhaust system. When the augmentor installation had been completed, further tuft tests showed that most of the drag-producing turbulence at this point had been eliminated.

In the same project, other proposed modifications were studied. These included doors for the landing gear wheel wells, flush-riveting for wing leading edges and elimination of numerous small air scoops. But the exhaust augmentor installation was selected as the most beneficial and most practical modification.

About $20,000 was spent by Butler Sales and Dallas Aero Service in the project, and a total of 6 different Doves were flown in the tests, all of them with the cooperation of Dove owners and operators interested in improving the performance of their own airplanes.

There are sixty-odd de Havilland Doves in the United States. About 40 of them are serviced regularly at Dallas Aero, which is not only a de Havilland authorized service base but which stocks a considerable inventory of de

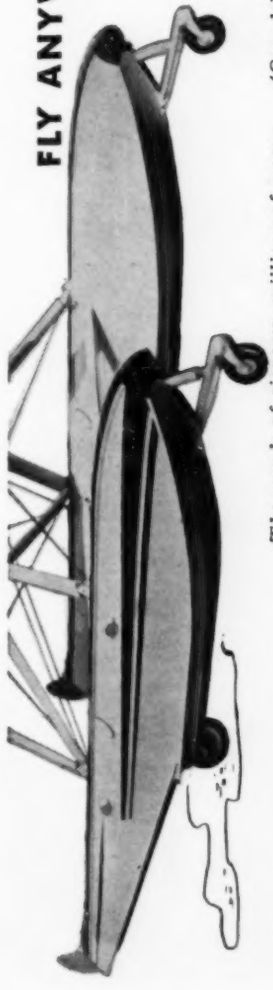
THERE IS A REASON WHY!

DALLAS AIRMOTIVE OVERHAULS MORE AIRCRAFT ENGINES THAN ANY OTHER COMPANY IN THE WORLD

DALLAS AIRMOTIVE INC.

6114 Forest Park Road, Dallas, Texas ELmhurst 3771

FLY ANYWHERE YOU WISH . . . WITH EDO AMPHIBIOUS FLOATS



Thousands of airports, *millions* of water landing areas are yours with new Edo amphibious floats perfected after 20 years development. Model 289's with smooth handling quadricycle landing gear are installable on any Cessna 180, give you unmatched utility. Edo Model 4580's, modified by de Havilland (Canada), give the Beaver (L-20) similar flexibility.

Standard Edo seaplane floats also readily installed on Piper Tri-Pacer, Super Cub, Cessna 170, and many other types. *This year fly floats!* See your dealer or write for Edo float brochure.

EDO CORPORATION • COLLEGE POINT, L.I., N.Y. *FINE FLOATS SINCE 1925*

In the Southwest It's Dallas Aero Service

- AIRCRAFT
- ENGINES
- ACCESSORIES
- INSTRUMENTS
- RADIO

- CONVERSION
- MODIFICATION
- OVERHAUL
- REPAIR
- TANK SEALING

- SERVICING
- STORAGE
- ENGINEERING

AIRCRAFT SALES AND CUSTOM INTERIORS

"Guaranteed Quality"

DALLAS AERO SERVICE

PHONE DI-3141 • 3200 LOVE FIELD DRIVE • DALLAS 9, TEXAS

Havilland airframe, engine and propeller parts for the de Havilland factory as a service to American Dove owners. Two de Havilland factory technicians are stationed at the Dallas base on Love Field. Butler's sponsoring of the improvement proeject was authorized by Paul Butler of Chicago, who has been actively interested in many phases of business flying developments in the United States. ★ ★ ★

AIR REPORT

(Continued from page 5)

Pilot Ricardo Olaran, who taught the president to fly, made the delivery.

CONVERSION OF 23 DC-3 AIRLINERS to the Pan American Airways "Hi-Per" configuration, in which R-2000 DC-4 engines are installed, has been contracted by Avianca Airlines.

LEONARD S. HOBBS, engineering vice president of United Aircraft Corp., and 1954 Collier Trophy winner for developing the J57 dual-compressor jet engine, has been awarded an honorary doctor of laws degree by Texas A. & M. College, from which

WE WANT TO BUY YOUR USED AIRPLANE

Any make, any model, any size. Highest cash prices. Dealers — We can buy one, or your complete stock — New or used.

BEN GRIFFIN AVIATION COMPANY
Highland Park Airport, Rt. No. 7, Coit Rd
Dallas, Texas EMerson 5193

"TEXAS VOLUME PIPER DEALER"

Airmen's Calendar

July 22-24—25th Annual Arkansas Air Tour, Little Rock to Gulfport, Miss., Sponsored by Arkansas Private Fliers Association.

Aug. 5-7—3rd Annual Experimental Aircraft Association Fly-In, Curtiss-Wright Airport, Milwaukee.

Aug. 11-14—Air Force Association Convention, San Francisco.

Aug. 14—Montana Pilots Association Annual Flying Fish Breakfast and $1,000 Trout Contest, Livingston.

Aug. 19-21—2nd Annual Fly-In, Antique Airplane Association, Ottumwa, Iowa.

Sept. 21—Southwest Airmotive Engine Forum, Sponsored by Pratt & Whitney and Bendix, Melrose Hotel, Dallas.

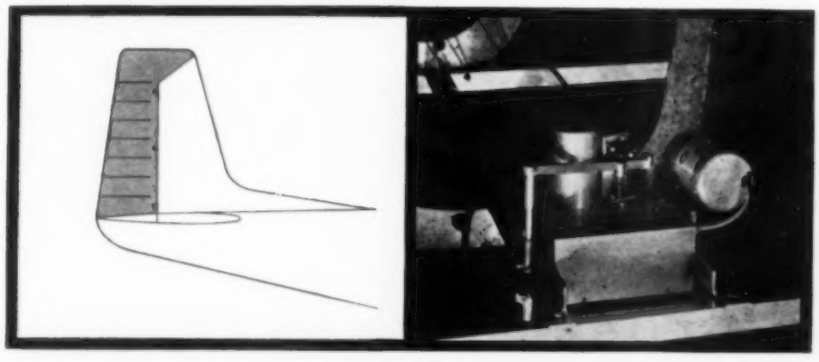
Oct. 5-7—National Airport Conference, Norman, Okla., Sponsored by AAAE, University of Oklahoma and CAA.

Oct. 8-15—7th Annual All-Texas Air Tour. 3,000 Miles Around the State With 42 Stops.

Oct. 11-13—ATA Annual Maintenance & Engineering Conference, Baker Hotel, Dallas.

Oct. 26-28—Southeastern Airport Managers Association Annual Meeting, Poinsett Hotel, Greenville, S. C.

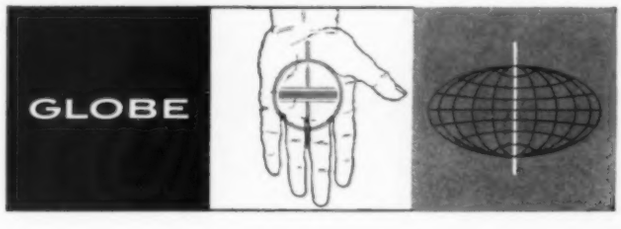
DS-5
audio isolation system
Finest pilot-copilot cockpit audio isolation system providing complete dual stations, 12 audio channels per station, phone use, 4 watts per station output, integral interphone system and better than 60 DB between stations.
for details and prices write:
FLITE-TRONICS, INC.
3303-A Burton Avenue
Burbank, California
Pat. Pending



LET GLOBE TAKE THE RUDDER

for comfortable, safe cross-country flying

Globe's new Gyro-Stabilizer gently, firmly guides your plane. It automatically detects and combats unwanted turns and thus eliminates the dangerous spiral dive. And when "little weather" becomes "big weather," a turn of the Trim-Turn knob starts you in a stable, controlled 180. Lightest in weight, easiest to install . . . there is no finer automatic rudder control at any price. Write for details . . . may we arrange a demonstration of the new Gyro-Stabilizer for you? *Globe Industries, Inc., 1788 Stanley Avenue, Dayton 4, Ohio.*



he graduated in 1915-16 at the age of 19.

NEW AERO COMMANDER DISTRIBUTOR is Trans-Aire Corp., New Orleans, located in the Pan Air hangar at New Orleans Airport. It is an associate company of British Colonial Airlines of Belize, British Honduras, headed by John Freiberg of Cincinnati, Ohio. Lucien Taillac is sales manager of Trans-Aire in New Orleans. . . . **AERO COMMANDER SALES MANAGER** for L. B. Smith Aircraft, Miami distributor, is James Mills, Jr.

AIRCRAFT SALES COMPANY OF FT. WORTH has opened a completely-equipped Longview Branch for Cessna sales and service at Gregg County Airport in East Texas. W. H. (Bill) Fate is in charge. He was formerly associated with Aircraft Sales and Les Bowman in Ft. Worth. Fate's Gregg County operation offers complete one-stop round-the-clock service to owners of Cessna and other business planes.

QUESTIONS AND ANSWERS

(Continued from page 8)

ties at _____; plans for future expansion to include service of radio gear (this should be a top priority); plans for future expansion of tools, equipment, and personnel to service larger and multi-engine aircraft.

"6. May sell and demonstrate for sale aircraft, providing personnel for proper supervision and demonstration."

Policy: while this service is optional, the board desires the tenant to actively encourage and assist any potential buyer. There should also be promotion of joint ownership and group-flying clubs, in order to increase aviation interest and activity.

"7. May sell aircraft engines, parts, and accessories.

"8. May do aerial reconnaissance and photography.

"9. May operate a snack bar.

"10. May conduct other activities reasonably necessary to the proper conduct or operation of a civilian aviation operation.

"ESSENTIAL ACTIVITIES: it is agreed by the parties hereto that the conduct of the business listed in paragraphs 1, 2, 3, 4, and 5 above are necessary to properly promote the interests of the airport and aviation. The aviation board shall have complete jurisdiction in the investigation of and evaluation of the adequacy of these essential activities.

"CONDUCT OF BUSINESS ACTIVITIES: the tenant shall spend full time (at a 40-hour per week minimum) in the operation and promotion of aviation business activities at _____ Field, or in his absence, shall designate a fully-qualified individual, who is acceptable to the board, to fulfill the enumerated obligations of the essential business activities."

Policy: the board shall expect the operator, or his designated agent, to be reasonably available for personal contact with individuals desiring instruction, charter, rental, or other essential services. This must definitely include time spent at the airport on week-ends, holidays, and off-hours, to be spent in personal stimulation of interest in aviation activities.

"There should also be active participation in the organization and promotion of such activities as aviation clubs, fly-in breakfasts, air shows, etc."

We won't set down here the usual provisions in the lease dealing with rents, insurance, maintenance, surrender in good condition and the other matters which should be normal to all leases. We will say that those provisions are well written and clear. The parts quoted show that the airport board is keenly interested in the promotion of aviation in its community. It is fortunate, too, in having a long-established and capable operator to carry out sound policies. ★ ★ ★

NEW, COMPACT
Scott
OXYGEN CONSOLE

Complete, fixed oxygen system for business aircraft.

$300*

*Average cost of complete system including installation.

Write today for more information. Give make of aircraft.

Scott — FOR SAFETY—FOR SERVICE — SINCE 1932

SCOTT AVIATION CORP.
235 Erie Street, Lancaster, N.Y.
Export: Southern Oxygen Co.
15 West 57th Street, New York 19, N.Y.

MR. MANUFACTURER:
Texas fastest growing airplane dealer would like to distribute your product to owners in our area. Accessories — Radios — Etc. Can invest up to $250,000.00 cash for inventory stock.
BEN GRIFFIN AVIATION COMPANY
Highland Park Airport, Rt. No. 7, Coit Rd.
Dallas, Texas EMerson 5193
"TEXAS VOLUME PIPER DEALER"

THE POPULAR NEW YORK ADDRESS...
HOME OF THE FAMOUS
Hawaiian Room

Hotel Lexington
CHARLES E. ROCHESTER, President
George W. Miller, Manager
LEXINGTON AVE. at 48th ST.
NEW YORK 17, N.Y.

A Few Reasons Why AEROTRON Is A Leader In Its Field . . . .

. . . . Area distributors for Collins, Flite-tronics, Narco.
. . . . Approved radio repair station (No. 3668) Class I and 2.
. . . . Full insurance for aircraft in our hangar.
. . . . Hangar space sufficient for DC-3 equipment.
. . . . Specialists in custom radio installations.
. . . . FCC and CAA licensed technicians.
. . . . Complete radio overhaul and repair facilities.

ARC
AEROTRON RADIO CO.
Tulsa, Oklahoma
COLLINS
Hangar 12
P. O. Box 8442
Municipal Airport
Telephone 8-1507

WHAT ?? WHERE HOW MUCH $

We want to buy your airplane Distributorship or Dealership. Up to $500,000.00 cash!!
BEN GRIFFIN AVIATION COMPANY
Highland Park Airport, Rt. No. 7, Coit Rd.
Dallas, Texas EMerson 5193
"TEXAS VOLUME PIPER DEALER"

EXECUTIVE TRANSPORT AIRCRAFT
DOUGLAS, LOCKHEED, BEECH, GRUMMAN, and CURTISS aircraft for sale. For top value executive aircraft call or write ATLANTIC AVIATION CORP., P. O. Box 146, Hasbrouck Heights, New Jersey. HA8-1740. Complete aircraft maintenance facilities at Teterboro, New Jersey, and Logan Airport, Boston.

NAVCO INC. Lambert Field St. Louis, Mo. PErshing 1-1710
Has all Parts and Supplies for Executive DC-3 LODESTAR BEECH
Airframe Engines Radios
A.R.C. Bendix Collins Lear Sperry Wilcox
P&W Continental Wright Goodrich Goodyear

ENGINE WORKS
Lambert Field Inc. St. Louis
Largest supplier of engines for executive DC-3. We stock, overhaul, and install—
SUPER-92
Wright R1820 -202 -56 -72
Pratt & Whitney R1830 -75 -92 -94
Also R2000-D5, -13 R1340 R985
DC-3 Owners—write for our DC-3 engine evaluation form, and engine exchange plan.

AIRPLANES WANTED!
Need 50 Bonanzas, 195's, 190's, 180's, 170's, Tri-Pacers, Twin Navions, Aero Commanders, Twin Bonanzas, etc. Pay highest wholesale prices. We'll buy one or complete dealers' stocks, new or used.
VEST AIRCRAFT CO'S. SKYRANCH
Box 5306, Denver 17, Colo.

AIRCRAFT FINANCING
Dealers and Operators, Inquire About Our New Low Rates.
Dealer Floor Planning
Aircraft Finance, Inc.
Skyranch Airport, Box 5306
Denver 17, Colo.

AIRPLANES WHOLESALE
Send for Free Weekly Lists
Planes Supplied to Dealers on Low-Cost Floor Plan.
We'll Finance Your Sales!
Vest Aircraft Co's. Skyranch
Box 5306, Denver 17, Colo.

GRUMMAN SUPER WIDGEON
by McKinnon-Hickman
Take-off 700' land, 10 seconds water—Cruise 160 mph. on 65% power—True Single Engine Operation — Comfortable — Versatile — Economical. Immediate Delivery.
Kits also available or we will convert your Widgeon at Portland, Oregon or at New York in one month's time.
Write for Brochure.
WELSCH AVIATION CO.
60 East 42nd Street, Suite 729
New York 17, New York Murray Hill 7-5884

We Buy DC-3 and C-47
— also components, fuselages, center sections. Prefer runout or needing work. Airline, passenger, or cargo, Pratt & Whitney or Wright. State price, time, quantity, type engines.
We are not brokers
Remmert-Werner, Lambert Field St. Louis, Mo.

REMMERT-WERNER, Inc.
Lambert Field St. Louis, Mo.
Offers Your Choice of
1 DAY 100-hour INSPECTIONS or 2 DAY for DC-3 or 3 DAY 100-hour OVERHAULS
BEECHCRAFT LODESTAR

BONANZAS
For Top Quality Bonanzas
VISIT — CALL — WRITE
B. D. "BUN" DEWEESE
J. R. GRAY COMPANY, INC.
Beechcraft Distributors
Love Field — Dallas, Texas
Office EL-3245 Home JU-8664
GUARANTEED

1	Greater Selectivity	No unwanted TV or FM stations, no spurious responses.
2	Greater Receiver Sensitivity	2 microvolts or better for 50 milliwatt output.
3	Positive Receiver Tuning	Gear Drive can't slip or bind. Glare-proof black dial is easy to read, day or night.
4	No Drift	Because all high voltage is electronically regulated.
5	Low Omni Course Error	2 degrees or less, on any course.
6	Powerful Transmitter	3 to 4 watts output on any channel, 118 to 127 mc.
7	Dynamotor Power Supply	No vibrators to stick, always reliable.

Available from your distributor, or write:
DARE, INC.
U. S. ROUTE 25 • TROY, OHIO

IN DALLAS IT'S
Dal-Tex AVIATION INC.
Cessna Lear NARCO
World's Largest Cessna Dealer
HIGHLAND PARK & LOVE FIELD

AIRCRAFT FINANCING
Dealers and Operators — We can finance your sales — Floor plan your stock — Call, write or wire
BEN GRIFFIN AVIATION COMPANY
Highland Park Airport, Rt. No. 7, Coit Rd.
Dallas, Texas EMerson 5193
"TEXAS VOLUME PIPER DEALER"

SERVICE GUIDE FOR FLIERS —
WHERE to STOP

IN SAN ANTONIO . . .
IT'S ALAMO
AIR LINE
SERVICES

On San Antonio Municipal Airport transient pilots who want the best in prompt and efficient service always stop with Alamo Air Line Services, Inc.
Texaco Products — Storage — Tie-Down
Next time you're down our way, drop in!
Free transportation to and from Terminal Bldg.
24-Hour Charter Service Telephone Travis 2649

Flying's Swell at the FLYING L

An adventure in real Western life for all the family . . . Superb food . . . Your favorite ranch sports . . . Cozy-comfort guest suites. Located at Bandera, 48 miles West of San Antonio.

Guided missiles and atom-powered submarines bring bold, advanced concepts to Your New Navy

Air and atomic power can now go to sea...*under water*. The U. S. Navy today has weapons with striking power beyond imagination...Regulus guided missiles and a growing number of Nautilus class atomic submarines.

Regulus missiles were designed and built by Chance Vought for submarine or surface ship operation. These deadly pilotless "birds" can deliver powerful warheads against enemy targets from hundreds of miles at sea. They have brought *air power* to the underwater fleet...a fleet that is being even further strengthened by atomic submarines able to cruise at high speeds around the world without surfacing or refueling.

Both of these new weapons are prime examples of the vital contributions made by Your New Navy to strengthen the U. S. Defense team.

Regulus saves tax dollars. Most missiles are built to make one flight, but one Regulus model, equipped with landing gear, has flown 15 times! For test and training purposes, this feature means more test data gathered and many more men trained at far less cost.

CHANCE VOUGHT AIRCRAFT
INCORPORATED · DALLAS, TEXAS

DESIGNER AND BUILDER OF HIGH PERFORMANCE MILITARY AIRCRAFT SINCE 1917

FACILITIES at Purdue University Airport include restaurant, repairs, CAA Communications and fast, efficient service for a heavy volume of executive plane traffic. Fuels and Lubricants used and sold are Texaco exclusively.

TEXACO summa cum laude at PURDUE

PURDUE AERONAUTICS Corporation, Lafayette Indiana, is successfully: (1) serving executive and airline planes at Purdue University Airport; (2) operating its own DC-3 charter plane service; and (3) conducting a self-supporting live laboratory in co-operation with Department of Technical Institute, Purdue University, for training professional pilots and maintenance technicians. Purdue University also grants a BS degree in Air Transportation.

Like so many fixed-base operators, Purdue Aeronautics handles Texaco Aviation Fuels and Lubricants exclusively. They find that the prestige of the Texaco name—known and respected in all 48 States—enhances their own good service and is a definite business builder. One good example of the quality for which Texaco is famous is the fact that—

For over 20 years, more scheduled revenue airline miles in the U. S. have been flown with Texaco Aircraft Engine Oil than with any other brand.

Let Texaco quality and prestige build business for your operation. A Texaco Representative will gladly give you details. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

☆ ☆ ☆

The Texas Company, *Aviation Division,* 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants and Fuels

FOR THE AVIATION INDUSTRY

TUNE IN . . . TEXACO STAR THEATER starring DONALD O'CONNOR or JIMMY DURANTE on television...Saturday nights, NBC.